UNIFORM MOTOR VEHICLE STANDARDS ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON SURFACE TRANSPORTATION

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

NINETY-SEVENTH CONGRESS

FIRST SESSION

ON

S. 1402

TO ESTABLISH UNIFORM NATIONAL STANDARDS FOR THE CONTINUED REGULATION, BY THE SEVERAL STATES, OF COMMERCIAL MOTOR VEHICLE WIDTH AND LENGTH ON INTERSTATE HIGHWAYS

SEPTEMBER 24, 1981

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UNIFORM MOTOR VEHICLE STANDARDS ACT

THURSDAY, SEPTEMBER 23, 1981

U.S. SENATE,
COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION,
SUBCOMMITTEE ON SURFACE TRANSPORTATION,
Washington, D.C.

The subcommittee met at 9:02 a.m. in room 1224 of the Dirksen Senate Office Building; Hon. Bob Packwood (chairman of the committee) presiding.

The CHAIRMAN. The committee will come to order, please. I have had a chance to read all of your statements, with the exception of those that were not handed in as of about 7 o'clock last night. So again, we will follow the rules the committee has been following on limiting witnesses to 5 minutes. Your statements will appear in the record in total.

I would urge you to orally abbreviate your statements, and make the main points that you want to make, so we might have as much time for questions as possible. We will start off this morning with Mr. William Dempsey, president of the Association of American Railroads.

[The bill follows:]

II

97TH CONGRESS
1ST SESSION

S. 1402

To establish uniform national standards for the continued regulation, by the several States, of commercial motor vehicle width and length on interstate highways.

IN THE SENATE OF THE UNITED STATES

JUNE 19 (legislative day, JUNE 1), 1981

Mr. CANNON introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

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A BILL

To establish uniform national standards for the continued regulation, by the several States, of commercial motor vehicle width and length on interstate highways.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Uniform Motor Vehicle Standards Act of 1981".

FINDINGS AND PURPOSE

SEC. 2. Congress finds and declares that—

(1) All communities in the United States depend directly or indirectly upon commercial motor vehicles

for freight transportation services, and at least thirty-nine thousand of these communities receive freight service from no other mode of transportation.

(2) The width and length of equipment used in commercial motor vehicle freight transportation is subject to regulation by the several States, and such regulation is inconsistent and without uniformity between the several States.

(3) Nonuniformity of State regulation of commercial motor vehicle width and length has caused, and continues to cause, excessive and unnecessary fuel consumption, time-consuming litigation, increased consumer costs, and lost productivity in freight transportation.

(4) The continued State regulation of commercial motor vehicle width and length, in the absence of national standards for such regulation, constitutes an undue burden on interstate commerce.

(5) The purpose of this Act is to establish uniform national standards for the continued regulation, by the several States, of commercial motor vehicle width and length on interstate highways.

COMMERCIAL MOTOR VEHICLE WIDTH REGULATION

SEC. 3. No State shall establish, maintain, or enforce any regulation of commerce which imposes a limitation of less than one hundred and two inches on the overall width of

commercial motor vehicles operating on any segment of the National System of Interstate and Defense Highways, or any other qualifying Federal-aid highways as designated by the Secretary of Transportation, with traffic lanes designed to be a width of twelve feet or more.

COMMERCIAL MOTOR VEHICLE LENGTH REGULATION

SEC. 4. (a) No State shall establish, maintain, or enforce any regulation of commerce which imposes a limitation of less than sixty feet on the overall length of commercial motor vehicles operating in truck tractor-semitrailer combinations or a limitation of less than sixty-five feet on the overall length of commercial motor vehicles operating in any other combination of units on any segment of the National System of Interstate and Defense Highways, or any other qualifying Federal-aid highways as designated by the Secretary of Transportation: *Provided*, That the total length of any single unit in such combinations not be greater than forty-five feet, unless such unit was manufactured prior to the date of enactment of this Act.

(b) No State shall prohibit commercial motor vehicle combinations consisting of a truck tractor and two trailing units on any segment of the National System of Interstate and Defense Highways, or any other qualifying Federal-aid highways as designated by the Secretary of Transportation. No State shall establish, maintain, or enforce any regulation

of commerce which imposes a limitation of less than sixty-five feet for such motor vehicle combinations on such highways.

(c) For the purposes of subsection (a) and (b) the overall permissible lengths for commercial vehicles shall not include additional length required by energy conservation devices or designs.

ACCESS TO THE INTERSTATE SYSTEM

SEC. 5. No State may enact or enforce any law denying reasonable access to commercial motor vehicles subject to this Act to and from the Interstate Highway System and the Federal-aid primary system and terminals and facilities for food, fuel, repairs, and rest.

ENFORCEMENT

SEC. 6. The Secretary of Transportation, or, on the request of the Secretary, the Attorney General of the United States, is authorized and directed to institute any civil action for injunctive relief as may be appropriate to assure compliance with the provisions of this Act. Such action may be instituted in any district court of the United States in any State where such relief is required to assure compliance with the terms of this Act. In any action under this section, the court shall, upon a proper showing, issue a temporary restraining order or preliminary or permanent injunction. In any such action, the court may also issue a mandatory injunction commanding any State or person to comply with any applicable provision of this Act or any rule issued under authority of this Act.

STATEMENT OF WILLIAM DEMPSEY, PRESIDENT, ASSOCIATION OF AMERICAN RAILROADS, ACCOMPANIED BY LEE LANE

Mr. DEMPSEY. Thank you. I am accompanied by Mr. Lee Lane, member of the staff of the association. I appreciate the opportunity to appear before you to state the views of the rail industry on this legislation, and I appreciate the courtesy extended to me by the committee and the staff in permitting me to testify early so I can catch a plane to meet a commitment in another city.

It will come as no surprise to the committee to know that the railroad industry strongly opposes S. 1402. I would like by way of summary to start off with four general propositions that I think are unexceptionable, and then see how they apply to this legislation. The first is of course that trucks and rails are highly competitive over a broad range of commodities. It is in that competition that our interest in this bill is rooted.

The second proposition is that trucks—I do not say this in a pejorative way—that trucks have received a very substantial competitive advantage by virtue of the construction of the Interstate Highway System.

Now, the third proposition I would advance—and again, I think it is not debatable—is that to the extent that this advantage to the motor carriers is due to inherent advantages that they possess, the railroads have no right to complain. We would complain, but we would not expect to be heeded.

But this is my last proposition: To the extent that this advantage is the result of a subsidy to the motor carriers by either the taxpayers or by other highway users, then it seems to me that we have a legitimate complaint. This is not only unfair competition, if it does exist—as we believe it does—but it is also unsound public policy, as this committee is well aware, because the subsidized mode can reduce its rates artificially. The subsidy benefits that mode and certain elements of the shipping community. But traffic does not move by the genuinely low-cost mode, and the result is that an inflationary factor is built into the transportation system. These are propositions that would command the support of all analysts in the transportation scene.

Now let me turn to S. 1402 in terms of these principles. In the first place, there is no question that it would increase the competitive edge that the motor carriers have. I need not go into the details of the legislation, with which everyone is familiar. Let me simply say that the result of all of the elements of the legislation would be that motor carriers would be able to increase their payloads, as we calculate it, by up to 17 percent. That is a very substantial figure, and it is one that we find quite alarming.

Now, the crucial question is whether this increased ability on the part of the motor carriers would be in the public interest. The answer to that question depends upon whether the results of S. 1402 would be increased highway costs. This is a critical question, because S. 1402 is not accompanied by any increase in motor carrier user charges. I suggest it is self-evident that S. 1402 would indeed increase highway costs. The increased payload would mean heavier weights on the axles, and it is well established by all studies that we are familiar with that increased axle weights increase the damage to the pavement.

Indeed, there is another probable result of the legislation that would increase pavement damage. By permitting the twin-trailers to operate, you would cause a change in the configuration of many trucks, resulting in the increased use of single axles rather than double axles. Again, as my prepared statement indicates, studies have shown that tandem axles cause less pavement damage at any given weight than single axles do.

Presumptively, therefore, I suggest that S. 1402 represents an unfair competitive threat to the railroads because of the absence of any associated user charges. That presumption perhaps could be rebutted if it could be demonstrated that the motor carriers are now paying their fair share or more than their fair share of highway costs. Every study we are aware of indicates that is far from the truth. The interim study by DOT, for example, concludes that trucks of 50,000 pounds or more, in order that they might pay only 90 percent of the costs attributable to their use of the highways, should have their user charges increased by about 81 percent.

We do not mean to suggest that we stand in the way of progress or the use of available technology. But for the reasons I have indicated we do urge that questions of the sort raised by S. 1402 should be considered only in the context of an overall reappraisal of the user charge system.

Thank you very much, Mr. Chairman.

The CHAIRMAN. Do the railroads have any suggestion as to what a fair allocation formula would be?

Mr. DEMPSEY. Yes. I could introduce for you a detailed analysis of that. We have been in favor of a weight-distance tax as the appropriate mechanism for fair allocation. We support, of course, the preliminary findings of DOT with respect to their appraisal of the situation. If you would like a more detailed answer, I can ask Mr. Lane to speak to that.

Mr. LANE. In general, railroad industry has favored the use of a damage-based approach to the estimation of payment cost responsibility. That is to say that we believe highway user charges should take account of the additional repair and reconstruction that is necessary——

The CHAIRMAN. You are not answering the question. What is the formula. I understand what the theory is. What's the formula you suggest for allocation?

Mr. LANE. I'm not quite sure I exactly understand the question.

The CHAIRMAN. How do you determine what the truckers' share of highway costs should be?

Mr. LANE. Our position has been that the formulas developed by the actual road tests and referred to in our statement represent the best available engineering estimate of damage cost responsibility. And user charge rates should be set to conform to those formulas. That is roughly the approach used by FHWA in its interim report on cost allocation.

The CHAIRMAN. That is your full objection to the change of the lengths, widths, and even weights, even though this committee does not have jurisdiction? If the trucks pay their fair share, you have no objection?

Mr. DEMPSEY. Yes.

The CHAIRMAN. That is the only objection of the railroads?

Mr. DEMPSEY. It seems to me that is the only basis upon which we legitimately can stake our position.

The CHAIRMAN. As you know, there are different studies as to what a fair share should be. They do not necessarily come to the same conclusion. You would be willing to say, if reasonable people could accept a reasonable consensus on studies, that would satisfy the railroads?

Mr. DEMPSEY. Yes. Every disinterested study we are aware of indicates that the existing system falls far short of the fair allocation.

The CHAIRMAN. What is the railroads' specific objection to my amendment to the Natural Gas Pipeline Act to have 102-inch truck widths?

Mr. DEMPSEY. It is essentially the same objection. That is a more modest proposal than the bill that we are looking at now.

The CHAIRMAN. I have not seen many studies that indicate that the expansion of the width from 95 to 102 inches is a very significant additional cost on the deterioration of highways.

Mr. DEMPSEY. Mr. Lane, would you like to comment on that?

Mr. LANE. The important factor, Senator, is not the immediate impact of the width itself, but that, of course, you do get heavier vehicles as a result of their being more fully loaded, due to the added width. That effect the heavier weights, is the indirect, but important, effect of greater widths.

The CHAIRMAN. Let me ask a last question. You make reference to subsidies. You are willing to admit that perhaps of all of the industries in this country that the railroads had the greatest initial subsidies of any transportation system?

Mr. DEMPSEY. I would not concede that by any means. You are referring to land grants?

The CHAIRMAN. Yes.

Mr. DEMPSEY. No, the land grants were a consideration offered by the Federal Government for the commitment on the part of the railroads to expand into the wilderness areas.

The CHAIRMAN. Quid pro quo.

Mr. DEMPSEY. Not a subsidy.

The CHAIRMAN. They received nothing greater than the cost of extending the railroad? The railroads receive that.

Mr. DEMPSEY. Say that again.

The Chairman. You received nothing more in value than the cost of extending the railroad? The land that you received for moving West has proved to be of no greater value than the cost of moving West; that it was not a subsidy, did not give you any extra coal lands, or timber?

Mr. DEMPSEY. Of course it did. Yes.

The CHAIRMAN. Many times over.

Mr. DEMPSEY. That's right.

The CHAIRMAN. That's not a subsidy?

Mr. DEMPSEY. No. If you are suggesting that somehow the increase in value of the western lands should be taken into account in some fashion, to me that is the same as saying if you sold your house to someone 20 years ago, and that increased in value by, let's say, 200 or 300 percent, that somehow you are entitled to that

appreciation in value. I just do not understand that kind of analysis.

The CHAIRMAN. Senator Kasten?

Senator KASTEN. I don't have any questions at this time.

The CHAIRMAN. Senator Schmitt.

Senator SCHMITT. Thank you, Mr. Chairman. My concern about the proposals that are before us relative to trucking reflects some of the ones that I guess were expressed by the railroads, although I must admit that clearly there is a competitive interest in the minds of the railroads. But the highway system, certainly, in New Mexico, the Federal highway system, as well as the State highway system, Mr. Chairman, is deteriorating far more rapidly than we can build it up. My concern at this point is unless we get control of the highway system, that anything we do that might contribute to an acceleration of that deterioration will cost us a great, great deal in the future. That is one of the prime considerations that I am looking at, in addition to the increasing problem we have with highway safety, some of which can be attributed, I think, to trucking.

Do you see, gentlemen, on the competitive side, that there really will be any significant increase in competitive pressures the railroads would feel if these proposals are enacted?

Mr. DEMPSEY. Yes, we do, Senator. I cannot quantify it. But we do estimate, as I indicate in my prepared testimony, that the provisions of the bill would permit an increase in payload on the part of the trucks of up to 17 percent. That is a major increase and a very significant competitive factor. It is not accompanied by any increase in user charges, and therefore it would permit a significant decrease in unit costs. Therein lies the additional competitive disadvantage.

Senator SCHMITT. What particular commodities would you expect to see the competition in?

Mr. DEMPSEY. Mr. Lane, would you speak to that? It would be a wide range of commodities.

Mr. LANE. It really is, Senator. It is almost any commodity that is on the lighter loading end of the density scale. It would probably have a very marked impact, in particular, on some kinds of piggyback traffic. But really, there would be a very wide range of commodities that would be affected.

Senator SCHMITT. Would you expect to see any significant change in the haulage of coal?

Mr. DEMPSEY. No.

Senator SCHMITT. Would you expect to see any significant change in the haulage of grain?

Mr. LANE. Probably not.

Senator SCHMITT. Would you expect to see any significant change in the haulage of hardware, heavy-duty hardware?

Mr. LANE. Possibly. In those cases, yes, that is possible.

Senator SCHMITT. What about automobiles?

Mr. LANE. Also, yes, very definitely.

Senator SCHMITT. Is that where you think the major competition would occur, in the haulage of automobiles?

Mr. LANE. That would be one place where it would occur, but really, it is across a very wide range of products. Some paper products would be affected, as well.

Senator SCHMITT. Do you have any idea, since we eliminated coal and grain, what percentage of railroad traffic would feel these new competitive pressures?

Mr. LANE. I can't really quantify that, Senator.

Mr. DEMPSEY. We could take an effort at doing that.

Senator SCHMITT. On a commodity-by-commodity basis. That way the Senators could see how their State is affected.

Mr. DEMPSEY. The data would be a little soft, but we will do our best to make an estimate.

Senator SCHMITT. Is there anything in the history, recent history, of truck-railroad competition where there has been a change in, and improvement of, in the competitive environment for trucks, where you can point to a 1-to-1 correlation with a decrease in the competitive viability of the railroads?

Mr. DEMPSEY. One interesting comparison can be seen on a chart that shows the decline in the railroads' share of the intercity traffic on one line and the increase in Federal expenditures on the Interstate Highway System, beginning with the establishment of the Highway Trust Fund on the other. You will see an almost exact parallel. It is a most dramatic demonstration.

Senator SCHMITT. Can you provide us charts?

Mr. DEMPSEY. Yes.

Senator SCHMITT. What about last year's enactment of the trucking deregulation bill? Have you seen any adverse impacts?

Mr. DEMPSEY. That would be difficult to sort out for a number of reasons.

Senator SCHMITT. You probably picked up piggyback traffic as a consequence, didn't you?

Mr. DEMPSEY. We were deregulated last year as well, so you have the impact of two bills. Our situation has improved, but how much of that improvement is due to the enactment of the deregulation bills, both of them, and how much is due to the increase in coal traffic, for example, it is very difficult to sort out. I will say that in that connection, we are in favor of a free market in transportation. That is our goal. We think that subsidies are bad public policy, at least as a long-term solution to anybody's problems. This legislation, to us, is a step backward. The Congress, led by this committee, took important steps forward in the airline deregulation bill, the rail deregulation bill, and the motor carrier deregulation bill. That is the way we think things ought to go.

But it does not do any good to deregulate the railroads if on the other hand the Federal Government and State governments, taxpayers, and other users of the highway system are subsidizing the motor carriers, so that we have rate flexibility but we have to deal with the rates on the other side, that are artificially depressed by virtue of the fact that the motor carriers do not have to carry their full costs. We think this is antagonistic to the general direction that the Congress is moving in.

The CHAIRMAN. I have no further questions. Bob, do you have any?

Senator KASTEN. I am concerned about the direction of the testimony. What we are trying to do is reduce the cost or forestall increases in costs of transportation. It seems to me, in response to the Senator from New Mexico, you were saying that the problem with this bill was that it was going to reduce costs of transporting certain kinds of products. That seems to me to be a goal. We want to increase the efficiency of our transportation system. You are being subsidized and so are they. If we have an opportunity to increase the efficiency of transportation in the United States of America today, I think we ought to be doing so.

Mr. DEMPSEY. Distinguish between decreasing the cost and decreasing rates. It is a terribly important distinction. What I said was, their costs would be artificially reduced and, therefore, they would be able to reduce their rates. That does not mean that overall costs would be reduced. What happens is that overall transportation costs in those circumstances are increased. The reason is this: traffic that really should be going by rail, because rail is genuinely the low-cost mode, shifts instead to the highway. The highway is actually the higher cost mode, but not the low-rate mode, because the taxpayer is picking up part of the cost. So the overall impact is inflationary, even though some particular motor carriers and shippers benefit by virtue of it.

That is a fundamental principle of transportation economics.

You say we are subsidized. We will supply you with a DOT study of the subsidies to the competing modes. Congress requested it as part of the 4-R Act. As you will see, the conclusion of DOT is that the subsidies to rails have been more than offset from the beginning of the country by associated taxes.

In any case, our competitors in these kinds of circumstances will say, in effect, you get one, too. I do not think it is very productive to try to go back and unravel all the kinds of subsidies that have been granted in different modes from the beginning of the country. It seems to me that past mistakes are no excuse for the continuation of those mistakes in the future. And the Congress ought to set as its policy the phasing out of all subsidies to all modes and the requirement that they compete in a free marketplace.

Now that is what is going to bring about the lowest cost system of transportation that can be produced in this country.

Senator KASTEN. As you are well aware, this committee and this Congress are moving in the direction of more and more deregulation in all of these different areas. I am pleased that you support this effort. I want to repeat that where we can, where we have an opportunity through changes in the law to make a particular method of transportation more efficient we will. In other words, if we can get more, whether it is something you do with piggybacking or it is that some grains are shipped with automatic unloading, or whether it is a way that we can make a truck hold more cargo or run more miles before it has to be overhauled, whatever we can do in this process we want to making it more and more efficient.

Part of this legislation is designed to go in that direction.

Mr. DEMPSEY. Yes. As the representative of a competing mode, I have a lot of sympathy for the motor carriers who say that here is a better technology, and we ought to be permitted to use it. I am not saying whether it would be good public policy—the States and

representatives of the passenger motorists may object on several grounds. And those objections may be well-founded. I am just saying that from a purely technological point of view I can understand the motor carrier argument. And indeed, if the technology were introduced with provisions for the full payment of all costs associated with that technology, then I do not see that we could legitimately object. Others may be able to object on different grounds.

Senator KASTEN. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Dempsey and Mr. Lane. Thank you very much.

Mr. DEMPSEY. Thank you.

[The statement follows:]

STATEMENT OF WILLIAM H. DEMPSEY, PRESIDENT, ASSOCIATION OF AMERICAN RAILROADS

I am William H. Dempsey, President of the Association of American Railroads. Our members operate 94 percent of the total railroad mileage in the United States, employ 94 percent of the total railroad work force, and carry 98 percent of the nation's rail freight traffic. I appreciate the opportunity to appear before this Committee and present our views on S. 1402, a bill to increase motor vehicle width and length limits.

Let me say at the outset that the railroads interest in this legislation and in the issues of truck sizes and weights and user charges in general is legitimate and vital. I am aware of trucking industry assertions that such matters are beyond the proper legislative sphere of the railroad industry. I disagree.

Over the past decade, truck capacity has increased significantly, without corresponding levels of increase in user charges. A result of this has been steady growth in the truck share of the intercity freight market—mostly at the expense of the railroads.

Increased truck capacity—whether through higher weight limits or through greater lengths and widths—reduces truck costs. Without adequate adjustments in user charges, truck rates are thus reduced to levels below the full costs of service, which include part of the public investment in highways.

Railroads are faced with the necessity to cut rates on truck-competitive traffic or lose the traffic to the trucks. Either way, railroad revenue is lost.

Certainly, adverse competitive impact on railroads should not, in itself, dictate highway policy. The question, however, is broader than simply one of impact on competitors.

The competitive problem is a result of an existing situation in which heavy trucks do no now pay user charges sufficient to cover their share of highway costs. To the extent that these charges are inadequate, heavy trucks are receiving a subsidy—paid by other highway users—at the federal and state levels.

Thus, the competitive inequity of which the railroads complain is not a prospective matter, limited to S. 1402. It exists today. Nor is the competitive advantage of trucks inherent for most commodities. Rather, it is a result of subsidy for which there is no public need nor benefit.

It is important to note the specious nature of arguments that higher truck user charges would lead to higher railroad rates as well as higher truck rates, and thus would be harmful to consumers.

Certainly, if heavy trucks pay their full share of highway costs, truck rates will increase. Certainly, there may be cases where a truck-competitive railroad rate, held down by the competitive inequity, would then rise also.

But one must not confuse rates with costs. The costs of maintaining the highway system remain whether trucks pay their share or not. A proper user charge insures that the beneficiaries of truck transportation pay these costs—not the entire motoring public.

Further, the subsidy now enjoyed by heavy truckers creates a distortion in transportation choices because such choices are based not on true cost and service but on the advantages they can extract from the government.

Thus railroads are not the only losers. The subsidy is part of the reason for the serious shortfall in highway budgets around the nation.

Motorists who must travel on highways deteriorating because funds are not available for road repair pay higher fuel and vehicle maintenance bills. At the same

time, they are asked to make up the shortfall by paying higher fuel taxes and other user fees. S. 1402 would increase the demands on highway budgets without contributing anything to highway revenues. In view of the present crisis in highway finance, this would be an imprudent policy. It would be a policy which punishes not only the railroads, but other highway users as well.

There can be no doubt that the imposition of size limits contained in S. 1402 would increase highway costs. The bill would require states to permit 65-foot twin trailer trucks and 60-foot tractor-semitrailers on all Interstate and other qualifying Federal-aid highways, as designated by the Secretary of Transportation. It would also require states to permit vehicles up to 102" wide on all Interstate and Federal-aid highways with lanes 12-feet or more in width.

These limits would permit trucks now operating below the maximum weight limits to increase their payloads by as much as 17 percent. This added weight would produce heavier axle loadings, which in turn would increase the rate of pavement deterioration and drive up highway costs.

Even relatively small additions to the load placed on an axle can cause significant increases in pavement stress and result in reduced highway service life, accelerating the need for resurfacing and other major repairs. A 20,000-pound axle does 60 percent more pavement damage than an 18,000-pound axle, which in turn does 5,000 times as much damage as a 2,000-pound axle. This relationship between axle weight and road damage was established in the AASHTO (then AASHO) Road Test, performed in 1959 and subsequently confirmed by further studies in locations offering a variety of test conditions. In a recent poll of state highway administrators, sponsored by the American Automobile Association, officials in 45 out of 48 states felt that experience with their own highway systems confirmed the AASHTO test findings.

In addition to allowing increased loads, S. 1402 would cause a shift in truck configurations which would further add to highway costs. Pavement engineers have found that tandem axles cause less pavement damage at any given weight than single axles. Two single axles, each loaded to 18,000 pounds, cause 8 percent more pavement damage than a tandem axle loaded to 36,000 pounds. One effect of this bill would be a shift from tractor-semitrailers with two tandem axles to 65-foot doubles, which ride on a series of single axles. Even without considering the effects of increased payloads, this change in the axle arrangement would increase pavement damage.

Although pavement costs are only one element of highway expenditures, they are an important one. On Federal-aid highways, pavement repair and maintenance expenditures account for about one-fourth of the total highway budget. As the focus of the federal highway program shifts toward maintaining rather than expanding the highway system, this share will increase. The large proposed increases in expenditures for Interstate reconstruction, repair, resurfacing, amd rehabilitation (4-R) indicate this shift in focus. The increasing amount of Interstate mileage with pavement classified in poor condition suggests that this shift may be overdue. It also underscores the need for increased revenue—from highway user charges—to pay for highway repair.

Heavy truck user charges have not kept pace with the continuing trend to bigger, heavier trucks and the increased highway costs they cause. Federal user charge rates were last increased in 1961. Since that time, federal weight limits have been increased and highway construction costs have quadrupled.

Increases in heavy truck user charges are already long overdue both at the federal level and in many states. This is true whether or not truck sizes are increased. The changes in truck user charges needed to bring truck payments into balance with the highway costs they cause is now under study at the U.S. Department of Transportation. It is part of the comprehensive highway cost allocation study Congress requested in the 1978 Surface Transportation Assistance Act. While the final results of the study are not due until January 15, 1982, the Second Annual Progress Report, released in January of this year, contains a number of significant preliminary findings.

According to the Progress Report, user charges on trucks registered at gross weights of 50,000 pounds or more fall well short of covering their share of federal highway costs. The Report recommends that user charges for this class of vehicles be increased by 81 percent. Even then, these trucks would pay 10 percent less than their full share of highway costs.

Many states have recently conducted highway cost allocation studies which reach similar conclusions, finding that the heaviest trucks also underpay state taxes by significant amounts. A study done by the State of Washington called for an increase of 53 percent in heavy truck user charges. Studies in Mississippi, Georgia, and

Florida have found that increases ranging from 70 to 129 percent are needed to bring state truck tax payments in line with cost responsibility.

By requiring all states to permit 65-foot double trailer combinations, S.1402 would deprive some states of an opportunity to ensure that higher size limits are enacted only when truck user fees are increased by an appropriate amount. The federal law would place the states in an unfavorable bargaining position and make it difficult to gain the necessary user fee increases.

CONCLUSION

The U.S. Department of Transportation will soon release its report on the costs and benefits of increased truck weight and size limits. Less than four months from now, the results of the federal highway cost allocation study will also be available. The findings of these studies will give Congress the information it needs to decide on the interdependent questions of truck size and weight limits and user charges. The railroad industry urges that this Committee act on S.1402 only after Congress has assessed the need for changes in federal highway user charges. This will help ensure that railroads complete with motor carriers on an equal economic footing. It will also ensure that fees for the repair and preservation of the national highway system are adequate not only to meet current needs, but to cover the costs which would result from increased truck size limits.

As I conclude, let me address one further matter. Recent months have seen trucking industry spokemen charge that the railroad industry is, itself, the beneficiary of huge subsidies. I would frankly be happy to refute these charges categorically, but I would suggest that such an exercise is less than relevant in this forum.

It would be tragic indeed, if the ad hominem arguments of the truckers were permitted to obscure the important issues surrounding user charges and highway financing. The main issues are not whether railroads get subsidies or why the railroads want an end to truck subsidies. The key issues are a proper allocation of highway costs among highway users and the establishment of sound national transportation policy which is equitable to all modes of transportation.

The railroad industry is on record to the effect that it does not seek the continuation of any current government outlay which may properly be classed as "subsidy." I invite the trucking interests to adopt the same stance.

The CHAIRMAN. Now we will hear from R. V. Durham, Director of Safety and Health, International Brotherhood of Teamsters.

If you are going to make reference to those trucks, would you move them down just a little. I cannot see over the top of the pictures.

STATEMENT OF R. V. DURHAM, DIRECTOR OF SAFETY AND HEALTH, INTERNATIONAL BROTHERHOOD OF TEAMSTERS, ACCOMPANIED BY WARREN RHEAUME AND BARTLEY O'HARA

Mr. DURHAM. Thank you, sir. My name is R. V. Durham, and I have with me, Mr. Chairman, Mr. Warren Rheaume and Mr. Bartley O'Hara, with our organization. We are here appearing on behalf of our general president, Roy Williams, who is not able to be with us.

We support the intent of S. 1402 and feel with some modifications the bill will correct a number of problems for the truck driver and the motoring public sharing the highway with the professional driver.

Briefly, the current problem in a nutshell is that the States currently set maximum lengths from bumper to bumper, and that is from this point to this point, and very few States set the limits from this point to this point [indicating]. In other words, the cargo carrying part only. And as a result, the tractor is shortened. The COE and the very short semi conventional type truck is shortened to allow for the longer trailer or the more cargo carrying space. The units quite often are coupled very close by moving the fifth

wheel or the coupling device extremely forward, in order to stay within the overall length constraints.

Now this causes some serious problems for the driver. And to name a couple of major ones, first we have inadequate cab space. We have cabs that only have 15 inches between the back of the seat and the steering wheel with the seat adjusted all the way back. As a result, we have problems getting the driver behind the wheel.

Second, we have problems with the cab enclosure. As a result of shortening the tractor, the engine is being brought back into the cab compartment. And so there is a doghouse enclosure there, a fiberglass doghouse enclosure that cramps the space of the driver, and it increases noise and heat problems.

And of course, our statement describes some of those problems.

The second major concern or problem we have is when you slide the fifth wheel forward, the coupling device, in order to stay within the length constraints gives us some real problems, that is that it causes excessive weight to be shifted to the front axle, the steering axle tires. On all of the other axles you have two tires. If one blows, you have the other one. But in the front axle, if the front tire blows, it is "Katy bar the door."

In my local 2 weeks ago, a member was killed by a front-tire blowout. He went off of the bridge and down and was burned up. It does happen. It is a serious problem.

We also have handling and steering problems, because as you shift the fifth wheel forward, you have a handling problem of the tractor handling the trailer or the two trailers. It increases the incidence of jackknife accidents. And certainly not a minimum problem is that it increases the rough ride. The back slap problem to the driver, where the back of the seat is hitting the driver.

In our opinion, the problem, Mr. Chairman, can be corrected in one of two ways. That is, either leave the power unit out of the equation and set the length limits on the cargo part only or, if length limits are to be established, then set aside a certain amount of space. And we submit 15 feet is adequate space which would include this cab and this space between the trailer and the cab.

Now your proposed bill does that on the semi, but on the twins it does not do that. We would be happy with either approach. We are not here proposing to take 1 inch or 1 foot away from the cargo space. We are here concerned about the safety of that driver. And as a result, that is, either one of these two approaches would solve the problem.

In setting national limits, we would ask the States be permitted to continue to have flexibility in establishing greater dimensions, such as we have in the Northwest, where they are working with the twins, the large twins and the triples.

We also have some serious concerns about 102-inch width. We feel this matter should certainly be studied further before a 102-inch law is enacted.

And third, in specialized operation such as automobile transporters, we certainly have to look at that type of operation and protect those operations, so that we don't get into the situation where we have to remove automobiles.

And finally let me say that I think the time is overdue, Mr. Chairman, for some Federal guidelines. I think it is unfair to a national carrier to have to "spec" his equipment to meet the most stringent requirement of a given State. West of the Mississippi, you are permitted to pull twins, but you come East of the Mississippi, you have to break it down and only pull one. We feel the time is overdue for a change in that.

In closing, we would simply say that we appreciate the opportunity to at least present our problem to you, and we would be more than glad to work with the staff on any input from the Teamsters in attempting to draft some legislation in this area.

The CHAIRMAN. In a nutshell, you conclude that the overall lengths, if we have them, ought to be based upon the containers and leave the cab out of it, or if you are going to have it, have at least 15 feet for the cab, but preferably the first: Set the length on the containers at what we think is a rational length for safety or fair payment of taxes on the roads.

Mr. DURHAM. That's correct, Mr. Chairman. And that does not mean that the carriers would go to long conventionals. It would allow the carrier to then "spec" the truck that meets his needs. And then it would allow the manufacturer sufficient space to build a truck to get the job done. As it turns out now, a carrier that goes to a manufacturer and says, "We want you to build a truck that is 90 inches BBC, bumper to the back of the cab, and you cannot go 91, because it will be overlength." This puts the manufacturer in a very hard position in attempting to build a truck. And as we go to longer trailers and twins, we need that driver in full control of that unit.

That is our concern.

The CHAIRMAN. Senator Kasten?

Senator KASTEN. Thank you, Mr. Chairman. Are there any trucks that are now being manufactured—I should say any cabs or tractors that are now being manufactured or being used that would be precluded from being used if your 15-foot limit were established? In other words, you're trying to protect something. You see something shrinking and shrinking and shrinking, and you are saying, we cannot shrink any further, or is there a particular design which is now, at least, being used or in the process of being put into the system that you are concerned about?

Mr. DURHAM. It would not take any truck off of the highway. The 15-foot would be if you went that direction, the carrier could use 10 feet of it, 12 feet or 15 feet. The only truck we are refusing to drive right now is—they came out with a truck that is a cab under, and some of the Senators and Congressmen saw this, we brought it to their attention a few years ago. We have put a provision in their contract. We just don't drive that truck.

We do have a problem though with some of the equipment that is now in use, where we have had to go a smaller steering wheel, 20-inch steering wheel, in order to get the driver behind the wheel, because we could not get the driver behind the wheel to get in there and drive the truck. His stomach was right into the steering wheel. But it would not eliminate the use of any piece of equipment, if I understand your question.

The CHAIRMAN. That's a problem of the steering wheel.

Mr. DURHAM. When you go to a smaller steering wheel, Mr. Chairman, that gives a problem to the driver, because the larger the wheel, the more leverage he has in steering the truck. And many of the trucks, if not most of them, do not have power steering.

Senator KASTEN. But there is not any particular trailer or truck right now that you are trying to include?

Mr. DURHAM. No. We are simply trying to support some legislation that would allow sufficient space for the trucks to be built better. It would not remove any piece of equipment off the highway that I am aware of today.

Senator KASTEN. If legislation along the guidelines that you have outlined were adopted, would it be discriminating in favor or against any particular manufacturer or manufacturers?

Mr. DURHAM. No, it would not. All of the manufacturers will build any truck that the carrier "specs." In other words, whatever their specifications are. They build the long conventionals, the short conventionals, the COE. They build—and that is all of the majors, the Fords, the GMC's, the Internationals, the Freightliners. They are all building different configurations.

Senator KASTEN. Thank you, Mr. Chairman.

The CHAIRMAN. Jack?

Senator SCHMITT. Gentlemen, what is your analysis of the present condition of the Nation's highways used by truckers and of the present trends in highway safety as it relates to traffic?

Mr. DURHAM. I think certainly we could agree with probably what everybody knows is that we have the pothole problem. There is deterioration of the highway system. The industry, the trucking industry, the employees that we represent, I believe that they want to pay their fair share of maintaining those highways. We certainly support that concept, that they should pay their full share. As far as the accidents, there has been an increase, unfortunately, in fatalities among occupants of heavy trucks in recent years, a substantial increase in fatalities that troubles us. And I don't think anybody has got the data to date to pinpoint and say what is causing it.

The NHTSA study that was released a year or so ago back showed there was a 40-some percent increase in fatalities since the speed limit was reduced for heavy trucks. While there had been a reduction in deaths of automobile occupants, there had been an increase among heavy truck occupants. That gives us a lot of concern.

That is the reason we are here trying to address with you gentlemen some of the safety concerns we have. We do not oppose trucks going larger. We have supported changes in truck size law, for example, the trailers now are 13½ feet high. We supported that. We support on a national basis, the twins. What we are concerned about is giving that driver—after all, he is the man who has got control of the whole rig—giving that driver the proper tools to work with. And if you increase the length—and I have seen it happen time and time again in the States—if you increase the length, and you do not make some provision for that tractor, all that is going to happen is that there will be more freight put on

the trailer, and the poor driver will be in the same position he is in today.

Senator SCHMITT. What I am concerned about is these two things. What cost is this going to be to the taxpayer to not only catch up with the deterioration of the highways, but to see it accelerate as a consequence of heavier loads.

Mr. DURHAM. I do not see an increase in weights. There is no increase of the weight proposed here. The weight now is 80,000 pounds practically nationwide. There are a few States that are still holding out. This is, in effect, an opportunity to get some handle on the problem where we have in a State that says: "We are going to set a very stringent regulation overall." And then a carrier like TransCon, they have to spec their equipment—even though they are a nationwide carrier—they have to spec their equipment in order to go through that one State. One State can screw up the whole mess.

Senator SCHMITT. You are saying that this proposal before us will have no effect on accelerating deterioration of the interstate system?

Mr. DURHAM. I do not see that it would. I know the argument could be made that trailers cube out before they hit the limit, as far as their weight; and that may be true in some of your high volume light-weight-type materials. I guess, in that situation, you might be able to put on another 10 refrigerators, or something like that, to where you are cubing out before you hit the 80,000.

Senator SCHMITT. What percentage of the trucks are cubed out?

Mr. DURHAM. I don't have the figures.

Senator SCHMITT. Would you supply that?

Mr. DURHAM. Yes. I think the American Trucking Association has given that to you, anyway.

Senator SCHMITT. We would like to have two different viewpoints on these kinds of things.

Mr. Chairman, as you, I spent all of August driving around my State. New Mexico is a big State. I drive a pickup as the most efficient way of getting from place to place in my senatorial activities. And frankly, the trucks are going awfully fast.

And as you look to what has happened to the fatality rate, you have got to look to yourself, because New Mexico does not have a State police force adequate to police its highways. It should have, and that is our problem. But it seems to me the trucks are taking advantage of that, as are other people. If you drive 55 miles an hour, there are not many people that aren't passing you, and a lot of them are trucks, big trucks.

Mr. DURHAM. Senator, let me just respond in this way. We support the 55-mile-an-hour speed limit. Our national office has gone on record in support of the 55-mile-an-hour speed limit. We would submit that a number of these trucks that possibly are out there, going excessive speeds, may not be the regulated carriers, but are the independents or the owner operated. They spec their trucks to where they can run 70 or 80 miles an hour.

Most of your regulated carriers, you will find that since the speed limit has been reduced, are specing their equipment to where they—they are governed. The governor cuts in at about 62 miles an hour.

Now, you do need some leeway between 55 and 62.

Senator SCHMITT. Sure.

Mr. DURHAM. We do not support, and we would do anything we can to cooperate, as far as trying to reduce this excessive speed out there. Now, I'm not going to say that we don't have Teamsters speeding, because we know that we do. I am out on the highway, too, and when you see somebody come by at 70, 75, I would ask you to look at the door and see what the name is on the door. You will find quite often that it is not a regulated carrier—possibly it does not even have a name on the door.

Senator SCHMITT. A lot of those have nice names on the door.

Mr. DURHAM. If you would turn it in, we would be happy to talk with the carriers.

Senator CANNON. Is the issue of the cab size one that is subject to negotiation between the Teamsters and the regulated carriers?

Mr. DURHAM. Yes. It is, Senator. We have a provision in our contract which required a study, and the Society of Automotive Engineers, with the funding of the Teamsters, the carriers, and the Government, is in the process of trying to find out how much in-cab space is needed for truck drivers.

The problem we have, Senator, is that once we get those results—and let's assume for the sake of discussion—and I'm reasonably sure that this is the way it will come out—we need another 6 inches in that cab. We have negotiated it. We recognize we need it. But we cannot put it in there because it immediately causes all of the carriers to be over length.

We are in a catch-22 situation there. The intent of this bill, the provision that you wrote in the bill, would address that problem and would take care of it. And, when we do get the results of that study, then we would be able to put it into place.

Senator CANNON. Would you find any problem with going to a 48-foot limitation? Would that be sufficient protection?

Mr. DURHAM. On the semi?

Senator CANNON. Yes.

Mr. DURHAM. We are not too concerned on whether the trailer is 40 or 42, 45, or possibly 48, as long as the rig can be handled safely.

What we are concerned with is, if you extend it to 60 and you do not have a 15-foot provision for the tractor, or if you do not set the length constraints on the trailer, the additional length is going to be at the expense of the driver.

Senator CANNON. You take it out of the cab.

Mr. DURHAM. That's exactly right. As I mentioned, we have supported the industry over the years. When I started driving a truck in the 1940's, about the longest trailer we were pulling at that time, was about 28 to 30 feet. Of course, we have come a long way, to 45 feet. That is pretty much the norm. And 13½ feet high, and of course 96 inches wide.

Senator CANNON. I note that the committee you referred to now has requested an extention, until January 1, 1982, for the report and recommendations.

Do you think that it would be premature for us to act before that time?

Mr. DURHAM. No. I do not think it would be premature. I think certainly the Congress should act.

The point I am making—or I was trying to make—is whatever our committee should come up with, we are going to be in a situation where we cannot rectify the problem as long as the length constraints are set the way they are now. An example: In order to pull a twin in the Midwest, a twin 28, you have got to basically stay with a COE configuration; and in order to pull a 45-foot trailer in the East, and stay within the 55 foot, you have got to either go with COE or you have to go with what we call a "semi conventional."

Now, when the results of our committee are made known, and we need another 6 inches, we do not have anywhere to put it. There is nowhere to put it right now, because we are blocked.

Senator CANNON. Thank you, Mr. Chairman.

The CHAIRMAN. Any other questions, Jack?

Senator SCHMITT. No.

The CHAIRMAN. Bob?

Senator KASTEN. No.

[The statement follows:]

STATEMENT OF ROY L. WILLIAMS, GENERAL PRESIDENT, INTERNATIONAL BROTHERHOOD OF TEAMSTERS CHAUFFEURS, WAREHOUSEMEN AND HELPERS OF AMERICA

Good morning, my name is R. V. Durham, and I am the Safety and Health Director of the International Brotherhood of Teamsters. We appear here today on behalf of General President Roy L. Williams, who is unable to be with us.

In addition to my duties as Safety and Health Director, I am also President of Teamster Local 391 in Greensboro, North Carolina, representing some 10,000 workers, many of whom are employed in the freight industry. Therefore, I am exposed on a daily basis to the problems created by the present system—or lack of a system—of regulating heavy truck size in this country. It is against that framework that we present this statement.

We support the intent of S. 1402 and feel that with some modifications, the bill will adequately address some of the severe problems facing those of us who must operate this equipment on a daily basis. Our primary concerns in this area are the safety and health of the driver and the safety of the people who uses our nation's highway system. We urge this committee to attach the greatest weight to these issues in its consideration of the proposed truck size legislation before us today.

The present state of truck size regulation poorly serves both the trucker and the public. We feel that real advances in safety and industrial efficiency can be made through effective federal legislation. Even the Supreme Court recognizes a need for some sort of unity in the interests of interstate commerce.[1]

WHY CURRENT LAW IS INADEQUATE

At present, there is no federal control over heavy truck length. States are free to establish whatever length regulation they deem fit. As a result, no two states approach the problem of truck length in the same way.

All states establish an overall maximum length limitation, usually 55 feet in the East and 65 feet in the West. Yet only 16 states have set a limit on the size of the trailer. In the 34 states which do not regulate trailer size, there exists a strong incentive to increase trailer size in order to carry more freight. This is the natural, predictable result of overall length regulation without trailer ("cargo unit") regulation.

In such states, as carriers have converted to longer trailers, the space needed must be taken from that used by the tractor ("power unit"). It is this situation—increased trailer space at the expense of decreased tractor space—which creates the safety and health problems we will describe in detail later in our statement. Senator Cannon fully recognized these problems in introducing S. 1402 when he said: "I am committed to the concept of setting aside sufficient space for a reasonable separation between the trailer and the cab, as well as sufficient room for the cab itself." (Congressional Record S. 6550, June 19, 1980.)

[1] *Kassel* v. *Consolidated Freightways Corp.*, Mar. 24, 1981.

Our proposal is in no way intended to deny carriers space needed for cargo. The relative economic health of the trucking industry requires that carriers be allowed to operate in as efficient a manner as possible. Rather, we feel it is possible to formulate a federal length law which will provide the space needed for cargo while removing the power unit from the economic equation.

By legislatively severing the connection between tractor size and cargo carrying ability, carriers will be able to purchase and operate equipment which will best serve their specific, unique needs. At present, that decision is made for them by length laws which effectively dictate the use of short wheelbase equipment.

Generally, carriers must configure their equipment for the most restrictive state in which they plan to operate, so one "flawed" state length statute can influence the equipment choice of a nationwide fleet. Thus, the need for federal action is apparent.

THE CONSEQUENCES OF INADEQUATE POWER UNIT SPACE

Given the powerful economic incentive for longer trailers resulting in shorter tractors, several conditions inside and outside the driving compartment work against safety and health. Examples in this area are:

Interior Cab Space

As a study by the Highway Safety Research Institute demonstrates, many trucks being offered for sale today fail to meet even minimum recommendations for interior cab space, including adequate space between the steering wheel and the seat back. Aside from the obvious steering and fatigue difficulties this creates, the result is increased likelihood of abdominal injury in a crash situation.

The problem exists throughout the cab interior. One of our members recently suffered second degree burns on his right foot, caused by the placement of the accelerator only inches away from the engine block, separated only by a thin fiberglass "doghouse." With sufficient space, the manufacturers could place the engine forward of the firewall instead of locating the engine in the cab and enclosing it with an inadequate cover.

Our union is presently involved in a collective effort to find the true dimensional needs of truck drivers. Carriers, truck manufacturers and the government have joined us in funding a study by the Society of Automotive Engineers to determine the body measurements of drivers. But without a change in the length laws allowing carriers to purchase equipment which adequately accommodates their employees, the results of this study may well remain of interest only to academicians.

Cab Ingress and Egress

In 1977, a study by DOT found that 14 percent of all driver personal injuries resulted from slips and falls. The difficulty of entering and exiting high profile equipment is certainly a contributing factor in these accidents.

Driver Hazards, Fifth Wheel Placement

The location of the tractor-to-trailer coupling device, known as the fifth wheel, is of critical importance to the health of the driver and to the safe operation of the vehicle.

Ideally, the fifth wheel should be set anywhere from the center of the power unit drive axle(s) to 10 inches forward of this point. When the fifth wheel is moved forward of that range, as if often done in order to meet state length limitations, excessive weight is absorbed by the tractor, particularly the steering axle.

As a result, drivers are experiencing handling problems, especially in curves, and rough ride resulting from a fore and aft rocking motion caused by the fifth wheel placement. Often this produces a "back slap" phenomena, pounding the seat back into the driver's kidney region. Serious health effects result from this chronic, severe pounding.

In addition, with fifth wheels moved to the radical forward position, tractors must absorb additional shocks, and suspension systems are inadequate to provide a quality ride for drivers. A growing body of medical evidence testifies to the negative health consequences of whole-body vibration.

Thus far, we have discussed conditions affecting drivers inside the cab. In addition to these concerns, there are other equally important matters that affect the handling of long distance trucking equipment. Among the more serious problems are these:

Difficulty in Steering

Again referring to the location of the fifth wheel, the further forward this device is moved, the greater the load on the steering axle. Under ideal conditions, the weight placed upon the steering axle should be 9,000–10,000 pounds.

We are now operating trucks with steering axle weights of up to 14,000 pounds.

A recent study [2] by DOT demonstrates that as the weight on the steering axle increases, the effort required to steer the vehicle increases at a rate greater than the proportionate rate of weight increase on that axle.

Moreover, this report demonstrated that present length laws—which contribute to overloaded steering axles, improperly placed fifth wheels and cramped drivers' compartments—also results in a phenomenon known as "understeer."

That is, on a fully loaded truck the steering wheel must be rotated through a greater angle to effectuate a turn. Thus the unit "understeers" and the driver must overcorrect to keep the vehicle on the road.

Front Tire Blowout

Among professional drivers, perhaps the most feared of all situations is the steering axle blowout, for its occurrence reduces a driver to the status of a passenger in his own vehicle.

That is, a driver cannot predict truck movement in the event of a front tire blowout; and the driver can take little, if any, defensive action in such a situation.

Although the DOT requires tires to accommodate weights,[3] the regulation is virtually impossible to administer.

Moreover, the regulation only addresses itself to static weights and does not take into account such factors as temperature change or sudden weight shifts—fairly common occurances.

While it is an open question whether higher steering axle weights make a blowout more likely, it is certain that such higher weights make the consequences of blowouts more severe.

Jackknife

In a jackknife situation, the rear tandem goes out of control causing the trailer to "jack" to one side or the other. The likelihood of a jackknife increases as the wheelbase of the power unit is decreased.

Therefore, if the economic incentive for the use of increasingly short tractors is allowed to continue, the hazard of jackknife will increase correspondingly.

Tracking

Tracking refers to the ability of the wheels in a vehicle combination to follow the steering axle wheels, especially while turning. Vehicles of different lengths and configuration exhibit different wheel tracking characteristics. All articulated vehicles are subject to a well established engineering fact: the greater the distance between the kingpin and the rear tandem, the more severe the offtracking.

Therefore, a truck combination using a 55′ semi-trailer would track considerably worse than one using a 45′ semi-trailer, with a doubles combination using two 28′ trailers tracking better than either. The highway safety implications are obvious, as a longer combination would have greater difficulty occupying only one lane of traffic through a curve.

CONCLUSION

We appreciate the opportunity to express our views on this vitally important issue. We hope this Committee keeps in mind the very real concerns of the professional driver during its consideration of truck size legislation. A length law which adequately addresses our problems and increases the efficiency and competitive position of the trucking industry is possible; a consensus is achievable. We stand ready to participate in any way to achieve such an end.

The CHAIRMAN. Thank you, Mr. Durham. We appreciate it.

Next we will take Mr. Edward Kiley, senior vice president of the American Trucking Associations.

STATEMENT OF EDWARD V. KILEY, SENIOR VICE PRESIDENT, AMERICAN TRUCKING ASSOCIATIONS

Mr. KILEY. Thank you, Mr. Chairman.

My name is Edward V. Kiley. I am senior vice president of the American Trucking Associations. We appreciate the opportunity to

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[2] This study, made in response to S. 210 of the Federal Aid Highway Act of 1976, confirmed concerns voiced by drivers of heavy trucks.

[3] 49 C.F.R. 393.75(f).

present our industry's views relative to the provisions of S. 1402, the Uniform Motor Vehicle Standards Act of 1981.

We have prepared a detailed statement which we would like to submit for the record.

In order to preserve the committee's time, I would like to present a summary of that statement, and I may even summarize my summary a little bit.

Provisions of S. 1402 move boldly and properly to remove serious impediments to a more efficient method of the Nation's freight. We have developed the most modern highway system in the world. However, the full economic return on the investment we have made in the system will not be realized as long as we are unable to use the types of vehicles for which the system was basically designed.

The Nation needs increased productivity and greater efficiency in transportation. This need is enhanced by the uncertainty of fuel supplies and the necessity to achieve the maximum savings in fuel consumption.

The motor carrier industry today is severely handicapped in its efforts to gain increased productivity and greater efficiency, by its inability to operate in every State under modern size standards. Appropriate vehicle length is a vital component of modern size standards. Length is not controlled by Federal law. However, despite this and despite the fact that the 65-foot length/twin trailer combination has a great record of efficiency and safety, we are still not able to operate this highly productive, fuel-efficient combination in 17 States.

The 65-foot/twin trailer combination, developed from more than 25 years' experience in highway operations, provides transportation efficiency and productivity, which this Nation can no longer afford to ignore nor restrict. To continue to provide low cost, efficient highway transportation to the Nation, it is imperative that the trucking industry be able to utilize this most efficient and productive unit in all States.

S. 1402 accomplished this, by requiring the States to permit the operation of the 65-foot/twin trainer combination on the national system of interstate and defense highways, or any other qualifying Federal highway, as designated by the Secretary of Transportation.

Objections to the use of the 65-foot/twin trainer combination have no factual basis as they may relate to highway structural capability or highway safety. Combinations operating at the 65-foot length will be subject to the gross weight limit set forth in the Federal statute. Highway safety is not a valid reason for not permitting the 65-foot/twin trainer combinations.

Billions of miles' operating experience have demonstrated that the 65-foot/twin trainer combination is among the safest trucks on the road today. Studies by State and Federal agencies, including the Bureau of Motor Carrier Safety, Department of Transportation, and the National Highway Traffic Safety Administration, have verified the safety of these combinations when compared with any other vehicles on the highway.

The safety of the 65-foot/twin trainer combination has also been verified by the Supreme Court in two very important decisions.

S. 1402 provides that the States must allow a length of not less than 60 feet for a tractor/semitrailer combination.

Just as the need for additional fuel savings and operation efficiencies—particularly the need for greater national uniformity—supports the requirement that all States permit the 65-foot/twin trailer combination, there also exists the need for the industry to be able to operate the 60-foot/semitrailer combination on a national basis. And as in the case of the 65-foot/twin trailer combination, there is no sound basis—from the standpoint of safety or any other rational criterion—for not permitting the operation of this unit, on a regular basis, in all States.

We strongly support, therefore, Mr. Chairman, those provisions of S. 1402 which would require the States to permit the use of the 65-foot/twin trainer combination and the use of the 60-foot/semitrailer combination.

We oppose the provisions that would limit the length of the semitrailer, in any combination, to 45 feet. We see no safety need or other justification for applying Federal length limits to the individual components of truck combinations.

As we understand it, a call for separate length restrictions for the tractor and for the cargo unit—and, more particularly, the suggestion that 15 feet be reserved for the space between the front of the semitrailer and the back of the tractor—is to somehow assure that drivers will be satisfied with the way that the truck handles and the space provided them in the cab. This is an important but highly complex issue. We do not believe that it can be resolved through legislation. This issue should be the subject of more research and study, as is now going on at the Department of Transportation. We support this type of research.

S. 1402 would also revise the 96-inch width limit that has been in the Federal law since 1956. S. 1402 would call for a width of 102 inches, which is more realistic and more completely in line with the design capabilities of today's modern highway system. As a matter of fact, the 96-inch width is a standard that was adopted in 1946, and was related to 10-foot lanes. Today 12 feet is the minimum on all of our modern highways.

This concludes my summary statement, Mr. Chairman.

In our more complete statement we make suggestions for technical changes in certain parts of the bill, which we believe will clarify the intent and will facilitate the accomplishment of the purposes of the proposed legislation.

I will be glad to discuss these changes, if the committee wishes. Thank you very much.

The CHAIRMAN. I want you to reiterate your statement on the 102-inch width. When I met with some of the officials of the American Association of Railroads, they gave me the impression that your support was tepid, at best.

Mr. KILEY. No, sir. We support the 102-inch width.

The CHAIRMAN. You heard the railroads today cite a loss of freight and revenue if we go to the 102-inch width. Do you want to comment on that?

Mr. KILEY. That is very unrealistic, Mr. Chairman.

The reason for the 102-inch width, and also the reason for the 65 feet in all States, is to give our industry greater cubic capacity. We

need this because of the tremendous volume of light-density freight that this industry moves. This freight, the railroads do not move; they gave it up years ago.

We are talking about improvements in truck standards, truck dimensions, that will enable us to better move that freight, which only we move. They do not move it, and they cannot move it. The 102 inches is for more cubic capacity, and railroads indicated that the 102-inch capacity would result in more heavy vehicles. It can't. Even at that width, these vehicles will be subject to the same weight restrictions that are now in the Federal law.

I do not accept the railroad argument. I think it is a completely false one.

Senator SCHMITT. Would the Chairman yield on that point? I will yield back some of my time.

If you have a larger—even though you do not exceed the weight limit, if you have a larger cargo area, you are going to have a heavier truck for the same type of payload, are you not?

Mr. KILEY. The gross weight limit would control it.

Now, if the wider vehicle——

Senator SCHMITT. Let's say that you can fill up a smaller truck to 60,000 pounds and you can fill up a larger truck to 70,000 pounds. You still have not exceeded the weight limit, but you have a heavier truck.

Mr. KILEY. You have a heavier truck, but that does not mean anything as long as that truck is loaded in accordance with the bridge formula in the Federal law and is also held down by the actual load limits. We have in the Federal law restrictions——

Senator SCHMITT. You are talking about maximum limits, under which the present roads are deteriorating.

What I am talking about is, even though you don't meet those maximum limits—whether it is axle load or what have you—you still have a heavier truck.

The CHAIRMAN. If the limit is 50,000 pounds and today 96 inches, with a load full of cans it is 30,000 pounds; at 102 inches it might be 35,000 pounds. You have not reached the weight limit, but you still have a heavier truck.

Mr. KILEY. Yes. But under the design standards of our highways, that heavier truck has no effect on highway capability. We are operating——

Senator SCHMITT. I have to respectfully disagree. I am driving the same roads you guys are driving. Those roads are going to pieces. It is obviously due to the pounding of traffic. The interstate highways of New Mexico—we have I-40 and I-25, which have very heavy truck traffic, and they are just going to pieces faster than anybody can keep up with them.

Mr. KILEY. The highway system in many places needs rehabilitation, but we believe, by the studies that have been made, that they are wearing out on schedule. We do not accept the allegation that these roads are wearing out faster because of truck traffic.

Senator SCHMITT. I wish I had a chance to massage that schedule, Mr. Chairman. I would have changed it.

The CHAIRMAN. It wouldn't make the roads any different. We do that with budgetary matters.

Are the trucks paying their fair share?

Mr. KILEY. Yes. All of the computations, we believe we are paying our fair share of the Federal highway taxes.

The CHAIRMAN. I did not expect any different answer.

Mr. KILEY. I would add one thing. You asked earlier about cubing out. Fifty percent of the general freight carriers cube out before they weigh out. That is why more cubic capacity is needed to move the freight more efficiently.

I would like to come back to the issue of the competition, the railroad competition. The traffic we are moving today is traffic that no one else will move. The railroads don't want it. They gave it up. They don't go to these places. They do not serve these places. This is a false issue.

The CHAIRMAN. Bob?

Senator KASTEN. I just want to get you to clarify your position on the question of the 15 feet for the tractor or for the truck. This is the subject of labor-management negotiation, first of all. Is it your position that it would be or would not be appropriate for us to legislate a limit?

Mr. KILEY. I don't believe it would be appropriate. The primary issue here is the interior of the cab, the comfort for the driver and the safety of the driver in operating the vehicle in the cab itself. Now, over the years, there have been changes in the overall dimensions of the power unit, but the cab size has remained virtually the same.

There are problems here, and we think these can be resolved, and the resolution should be through studies. The Bureau of Motor Carrier Safety had a study underway. They have temporarily terminated the study for now. They were investigating the question of interior cab size and interior cab design. They have temporarily suspended this investigation. But it is going to continue for later possible rulemaking and study. We think this is the approach.

We do not believe, however, through size standards that the Federal Government should intervene and, in effect, design the vehicle. We believe this problem can be resolved without specifying specific dimensions for the integral parts of the combination vehicle.

Senator KASTEN. Why was the study delayed or terminated or postponed?

Mr. KILEY. They indicated they did not find enough evidence at this time to continue it on a positive basis. There is no need now for an immediate rulemaking. There would be some need for further study before they promulgated anything in the future. We refer to that in our more complete statement.

Senator KASTEN. There was also a question raised about the steering wheel size. Do you have any comments or questions, opinions, about that?

Mr. KILEY. That is an issue that I have not been too familiar with. If the Chairman would permit, our automotive engineer is here. He might be able to answer that more specifically than I can.

Senator KASTEN. In the interest of time, maybe you can provide that in a written response, back to the committee.

[The following information was subsequently received for the records:]

AMERICAN TRUCKING ASSOCIATIONS, INC.,
Washington, D.C., September 29, 1981.

Hon. ROBERT PACKWOOD,
Chairman, Committee on Commerce, Science and Transportation,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: At the September 24 hearing on S. 1402, "Uniform Motor Vehicle Standards Act of 1981," Senator Kasten asked that we provide information abut safety aspects of reduction of size of the truck steering wheel by some motor carriers.

This is in response to that request and also to provide additional information about truck cab sizes and driver safety.

Since the 1940's, the approximate distance from the front of a tractor to the front of a semitrailer on a "typical" combination vehicle has been 10 feet. Yet during that time, the driver's space within cabs has grown. Obviously manufacturers have learned to do several things which have contributed to such an achievement.

One of those innovations involves designing more efficient steering components which result in the need for less driver input for a given steering output. That enables the use of smaller diameter steering wheels which, in turn, leaves more space for the driver. This has been done under manufacturer's specifications, and that would indicate qualified steering system design engineers analyzed the change before it was made. They foresaw no problem, and gave their endorsement to it.

From a practical standpoint, there have been no accidents reported that have resulted from reduction of steering wheel sizes and it seems obvious, through observation of vehicles with reduced steering wheel sizes on the highways, that the drivers have no problems in maneuvering their vehicles safely through traffic.

Successful alterations can be made to basic vehicle systems and components when the consumer and manufacturer work together. Each truck builder must design his basic product to perform under the worst expected conditions. Once it has been determined what the actual operation for a particular truck will be, tailoring can be done to fit the conditions and factors like steering wheel size can safely be changed. In brief, there is a complex interaction of systems and components in trucks which leads to the conclusion that a broad simplistic answer like limiting semi-trailer size will not resolve the issue of driver satisfaction with truck handling and space inside cabs.

The fact that a coordinated approach by motor carriers, manufacturer, and government technicians is effective in resolving technical truck issues is born out by data from the Fatal Accident Reporting System (FARS) of DOT. FARS data for heavy duty trucks (26,000 pounds GVW and up) show both a lower fatality rate for truck occupants, compared to car occupants (1.5 per 100 million miles versus 2.44 per 100 million miles) and a reduction in heavy truck occupant fatalities since 1979. The number of heavy truck occupant fatalities has declined from 1,087 in 1979 to 975 in 1980, a 10.3 percent reduction.

Please let us know if you need any additional information on these matters. We respectfully request that this letter be made a part of the record.

Sincerely,

E. V. KILEY.

The CHAIRMAN. Jack, any further questions?

Senator SCHMITT. Yes, Mr. Chairman, just to follow up.

Have you projected what the higher aggregate weight and higher axle weight will be as a percentage of the current situation, as a result of the legislation?

Mr. KILEY. There wouldn't be any. As a matter of fact, from the standpoint of the actual axle weights, if you go to the greater use of the 65 foot as opposed to the traditional 18 wheeler, the average axle loadings would be less, staying within the Federal weight limit, either 80,000 pounds or the gross weight formula in the Federal law under which the vehicle cannot exceed that weight nor can exceed axle loads for which the highways were designed. Now, that is a matter of record, Senator, and the five-axle combination, the 65 foot, loaded within that weight limit, the uniform loading, you actually come up with average axle loadings well below the design capability. There would be a decrease, because the load is spread out. This is the kind of configuration of vehicle that the

highways were designed for. The 65 foot in the formula, which is in the Federal law, was recommended to the Congress back in 1964, by the Bureau of Public Roads, Department of Commerce, as the result of a specific request by the Congress to study this whole question, axle load limits, gross load limits, vehicle dimensions, and tell the Congress what the Federal law ought to be.

And they recommended 65 feet. And they recommended the formula which is now in the Federal law.

The CHAIRMAN. Is there any cost differential, significant cost differential, between the trailer—dual-trailer trucks, and the single-trailer trucks?

Mr. KILEY. In highway capability?

Senator SCHMITT. The cost.

Mr. KILEY. There probably is a higher capital cost in the initial investment. You are buying two trailers instead of one. The power unit remains essentially the same.

Senator SCHMITT. You think most truckers, regulated and independent, will go to the new configuration?

Mr. KILEY. No, sir. There are still many thousands of commodities that are suited to the single-tractor semitrailer, or tractor single-trailer unit. The 65-foot double bottom is particularly needed, and will be used primarily by the general freight carriers; the light-density carriers.

This is where it's very important, as our detailed statement points out. The trucking industry today is the sole carrier of less carload traffic. The railroads abandoned that years ago. They don't want it. There is a tremendous volume. I would daresay that in this country today if you were to measure freight movements by shipments billed, the greatest volume is less truckload traffic. I am not talking about something under 10,000 or 20,000 pounds. I am talking—for example, the average weight of the shipments carried by the general freight carriers is about 1,800 pounds. There is a terrific volume of this traffic. Now, this type of traffic, and where the loaded vehicles are made of many shipments requiring dropoffs and pickups, is particularly suited to the twin trailer and is why it is needed by the general freight carrier. It gives the efficiency he needs, and the carriers that use it find it very efficient. This is not competitive traffic, in any sense of the word. We are the only ones who can carry it.

All we are seeking here, in endorsing this legislation, is to get better equipment or more efficient equipment to carry that frieght which we alone are carrying on the Nation's highways.

Senator SCHMITT. Why did you fight the Small Communities Deregulation amendment?

Mr. KILEY. The one that would deregulate the traffic to small communities?

Senator SCHMITT. Yes.

Mr. KILEY. We felt that would lessen——

Senator SCHMITT. That is totally inconsistent with the statement you just made. You and the Teamsters wiped me out on this committee.

My small communities in New Mexico still do not get adequate truck service.

Mr. KILEY. There was some deregulation in the small communities.

Senator SCHMITT. There was a great statement about the kind of service that you provide—except that you will not provide it to the small communities.

Mr. KILEY. If the service was not being provided under the regulatory system we had before the act in 1980, this means a lot of carriers were not carrying out their obligation to give that service. I do not think, Senator, under the act of 1980, to the extent to which it is deregulated, they will get any better service.

Senator SCHMITT. They are because you fought the amendment that would have given them better service.

Thank you, Mr. Chairman.

The CHAIRMAN. Howard.

Senator CANNON. I would follow up. The hearings that we have held so far have indicated that they are not getting any worse service now than they were before deregulation.

Senator SCHMITT. Excuse me, Senator. I think we did a great job with that bill, don't get me wrong. I think we could have done a greater job if we had let the small communities run on a deregulated basis.

Mr. KILEY. We think it was basically a good bill, Senator, under the circumstances.

Senator CANNON. Let me get back to the width issue. Where did that limitation come from?

Mr. KILEY. We have to go back a bit, Senator Cannon. In 1956, when the interstate program got underway, it was felt that the Congress should put some limits on vehicle sizes and weights. They got the weight limits on a temporary basis, awaiting further study. And then they thought they should have a width limit. They did not know where to go. So they went to the same place they got the weight limit: They went to the 1946 policy statement of the American Association of State Highway Officials. That's 1946, 10 years before the act was passed. They took the 96 inches from that policy statement.

Now, the 96 inches was an archaic width, because if you go back to the policy statement—and this is specified in my more detailed statement, Mr. Chairman—they say the 96 inches is a desirable width because we were building 10-foot lanes, and as we go to wider lanes, such as 11 feet, we should consider 102 inches.

Well, today, on our interstate system, and in our primary Federal aid system, 12 feet is the required minimum width. We have 13-foot lanes on some sections of the interstate. The 96 inches is an archaic width.

Senator CANNON. That was a holdover from even before the interstate system was constructed.

Mr. KILEY. That's right; tied into 10-foot lanes.

Senator CANNON. Is it a fact now that the interstate system is 102 inches?

Mr. KILEY. The intercity bus industry got the lifting of the restriction in the Federal law from 96 to 102 inches for bus operations, on the interstate system, about 3 years ago.

Senator CANNON. 102 inches makes the buses and the trucks uniform.

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Mr. KILEY. That's correct.

Senator CANNON. I think we are going to hear today a good deal about a study conducted by the Department of Transportation about vehicle types in various States. I have not seen that study. DOT was not willing to provide it to our staff. That does not seem to qualify it as a ringing endorsement by the Secretary of the results of the study, whatever they may be.

I would like to ask, has ATA seen the study, and if so do you have any comments about it? Anticipating that some later witnesses may refer to it.

Mr. KILEY. You are not talking about the size and weight study that Congress ordered in the act of 1978?

Senator CANNON. No, I am referring to the one concerning the accident by vehicle type in the various States.

Mr. KILEY. Are you talking about the Biotech study that was conducted under contract by the Secretary of Transportation; is that the one you are referring to?

Senator CANNON. Yes.

Mr. KILEY. We are aware of that study. During the last administration, that study was put underway. And we were sent a copy of the draft of the consultant's conclusions for comment by the Secretary of Transportation on a sort of a semiconfidential basis, and others also got a copy. It was not released. It has not been released yet.

We looked at the study and we submitted comments to the Secretary in which we pointed out what we called serious errors in the techniques and the methods and the procedures, when the study was conducted. We said we do not believe you can draw any sound conclusions from this study. And we detailed our objections and our criticisms of the study.

After that, we had meetings at that time with Secretary Goldschmidt. He wanted to talk in more detail, and he turned to his staff and he said, "We had better look at these criticisms." The study was also given to others for criticism. It was given to us and, I think to others, with the understanding that this was sort of a privileged exchange of information. We never said anything publicly about that study except to tell him what we thought was wrong with it. We had more discussion with the Secretary. We have had meetings with the current Department of Transportation, and have since sent in a more detailed criticism of revisions to that study, and outlined where we think it is faulty. We think the study is faulty. We think the methods were wrong. The techniques were unsound. We do not believe you can draw any conclusions from it. As a matter of fact, the draft that we were given, the last draft of the study, the consultants themselves say, "We do not believe you can draw any sound conclusions from this study." We will be glad to supply the committee with our objections that we submitted to the Secretary.

Senator CANNON. Do I understand you to say that you felt the issue of the cab size, dimension of the cab size, was a labor-management issue?

Mr. KILEY. I do not believe it is that precise. I think it is an issue such as is underway now at the Department of Transportation. They have an ongoing study. I think the study should represent the

cooperative interests of labor and management, and the manufacturers, I think, should be involved in this, and the Department of Transportation, to resolve the problems that are presented by this question.

Senator CANNON. If we wanted to stick with a specific foot limitation on trailer size, what would be the limit acceptable to most of the ATA members?

Mr. KILEY. Let me go back to the 45 feet and try to answer it that way. The 45 feet would be restrictive. We have many carriers who need a greater length than 45 feet. Automobile transporters are one. There are many other commodities that need a greater length than 45 feet.

As a matter of fact, in the States today that have a 45-foot length limit—and they don't all have it—there are exceptions in every State, particularly for certain types of commodities. Now, we would have to look at what those needs are to come up with a figure that might be better than the 45 feet. At this point, I am not too sure what it is.

We don't believe, for example, the 15 feet is needed between the front of the trailer and the back of the tractor. Nobody makes that kind of a unit. Something smaller than that would be more than adequate. The precise figure, we do not know. We will be glad to check our special commodity carriers to see just what type of a trailer limit is more realistic than the 45 feet. We still think this is an issue that should be resolved to study research and possible rulemaking by the Bureau of Motor Carrier Safety rather than through specific legislative direction.

The CHAIRMAN. Bob? Jack?

Senator KASTEN. No, thank you.

Senator SCHMITT. No, thank you.

The CHAIRMAN. Howard?

Senator CANNON. Let me make sure I understand what you are saying. You are saying here that to go to the wider widths would help you take care of more of the high cube items. But you would not be getting up to the maximum weight. You would not be exceeding your actual weight limits, or your overall weight limits?

Mr. KILEY. I would say that the carriers who can use the 102 inches width would use that for greater cubic capacity, and reduce the 50-percent figure which we have. The same reason why the 65 feet is desirable. This would not greatly increase the total gross weight. But in any event, that gross weight will be within the gross weight design of the Interstate System bridges and structures. We are still operating within the gross weight formula. We would have to.

Senator CANNON. I have not heard any comment since I have been in here this morning about triples. And I just want to say that in my recent trip out to the State of Nevada, I was visiting a lot of the small communities, checking on service to small communities, among other things, and saw quite a large number of triples. Do you want to give us some kind of a statement on what the experience has been with the triples?

Mr. KILEY. There are triple operations in some of the Western States operating under special permit. The experience has been fairly successful in those States. In most of those cases, in fact, in

almost all of those cases, the experimentation that led to eventual use of the triples on a permit basis has been in cooperation with the State highway departments. Their operations out there have been highly satisfactory, where they have been used.

Now, what they have found in the Western part of the country, reflects the varying regional needs for different types of truck transportation. They have been very successful operations. The States have permitted them, as I say, on a permit basis, after experimentation and working with the State highway department. And we have seen no adverse reports from the Western States on the triple operations.

Senator CANNON. They still operate within the actual limits?

Mr. KILEY. Yes. And they operate within the gross weight formula contained in Federal law.

Senator CANNON. This should be a much more fuel-efficient operation, I should think.

Mr. KILEY. Yes, in terms of the fuel used for the total tonnage moved.

Senator CANNON. Thank you.

[The Statement follows:]

STATEMENT OF EDWARD V. KILEY, SENIOR VICE PRESIDENT, AMERICAN TRUCKING ASSOCIATIONS, INC.

Mr. Chairman, and members of the Committee, my name is Edward V. Kiley. I am Senior Vice President of the American Trucking Associations, Inc. The organization is a federation with affiliated associations in every state and the District of Columbia, plus thirteen affiliated national conferences. In the aggregate we represent every type and class of truck operation in the country, both for-hire and private.

We appreciate the opportunity to present our industry's views relative to the provisions of S. 1402, the "Uniform Motor Vehicle Standards Act of 1981."

Provisions of S. 1402 move boldly and properly to remove serious impediments to a more efficient movement of the nation's freight. We have developed the most modern highway system in the world. However, the full economic return on the investment we have made in this system will not be realized as long as we are unable to use the types of vehicles for which the system was basically designed.

Modern highways, and the trucks that use them, make up the central core of our entire freight transportation system. This combination means that no part of the country, no shipper, no industry need be without freight service. The need, therefore, to adjust vehicle size and weight limitations to the true capabilities of a modern highway system and increasing transportation requirements is imperative.

The nation needs increased productivity and greater efficiency in transportation. This need is enhanced by the uncertainty over fuel supplies and the necessity to achieve the maxium savings in fuel consumption.

The motor carrier industry is severely handicapped today in its efforts to gain increased productivity and greater efficiency by its inability to operate in every state under modern size standards.

Appropriate vehicle length is a vital component of modern size standards. Length is not controlled by Federal law. However, despite this and despite the fact that the 65-foot length twin-trailer combination has a record of great efficiency and safety, we are still not able to operate this highly productive, fuel-efficient combination in 17 states (Appendix A).

The 65-foot twin-trailer combination, developed from more than twenty-five years' experience in highway operations, provides transportation efficiency and productivity which this nation can no longer afford to ignore nor restrict. To continue to provide low-cost, efficient, highway transportation to the nation, it is imperative that the trucking industry be able to utilize this most efficient and productive unit in all states.

S. 1402 accomplishes this by requiring the states to permit the operation of the 65-foot twin-trailer combination on the National System of Interstate and Defense Highways, or any other qualifying Federal-aid highways as designated by the Secretary of Transportation.

As long ago as 1964, the Bureau of Public Roads, now the Federal Highway Administration (FHWA) recommended in its report to Congress ("Maximum Desirable Dimensions and Weights of Vehicles Operated on the Federal-Aid Systems") national operation of the 65-foot twin-trailer combinations.

In testimony on the 1975 Highway Act, Federal Highway Administrator Norbert Tiemann again recommended these units to the Congress. At the same hearings, James Lauth, speaking for the Department of Agriculture, presented a strong case for the nationwide operation of 65-foot twin trailers as a means of increasing farm productivity and saving energy. Recommendation for operation of the 65-foot twin-trailer combination unit is also part of the size and weight policy of the American Association of State Highway and Transportation Officials.

Nationwide operation of 65-foot twin trailers will make a significant contribution toward conserving energy. In fact, to carry a given tonnage of light and bulky freight in 65-foot twin trailers requires up to 19 percent less diesel fuel and 20 percent fewer truck trips than when the same freight is carried by conventional tractor-semitrailer combinations.

The American Trucking Associations, Inc. (ATA) estimates that 92.9 million gallons of fuel could be saved annually if those states not permitting 65-foot twin trailers were to allow such units on their highways. This does not include the additional savings that could accrue in states which now permit twins where the freight is now shipped in a tractor-semitrailer because one or more of the states along the route do not permit 65-foot twin-trailer combinations.

The Department of Energy, because of the fuel savings through 65-foot twin-trailer operations, has urged all states to adopt the 65-foot twin-trailer combination.

Another study by ATA estimates that in the period from 1975 to 1980, the use of 65-foot doubles combination saved 595 million gallons of fuel. This saving, however, was only about one-half of the estimated potential saving of 1.1 billion gallons in that period. Three geographic and regulatory factors contributed to the less-than-expected savings: Three eastern states, Florida, Delaware and Maryland, that permit 65-foot doubles are surrounded by states that prohibit their operation; in the midwest where some doubles are permitted, the size and weight restrictions of eastern and neighboring states reduced their effective application, and in the west, where the primary use of doubles is found, their full operational potential is limited by restrictive size and weight limits in the eastern half of the country.

Objections to the use of the 65-foot twin-trailer combination have no factual basis as they relate to highway structural capability or highway safety. Combinations operating at the 65-foot length limit would be subject to the gross weight limit currently in the Federal statute (Section 127, Title 23, U.S. Code).

Under this weight limit, or more specifically under the weight limit as controlled by the gross weight (or bridge) formula contained in the law, the 65-foot combination, because if has a greater number of axles, would represent highway, or bridge loadings, well within the design capabilities of today's highways.

Highway safety is not a valid reason for not permitting the 65-foot twin-trailer combinations. The principal factors relating to vehicle length in highway safety performance are braking, stability and passing times. With regard to braking and stability, the 65-foot combination with its greater number of axles, generally better weight distribution, reduced off-tracking and extra articulation points have as good or better safety performance than the standard tractor semi-trailer combination.

Billions of miles of operating experience have demonstrated that 65-foot twin-trailer combinations are among the safest trucks on the road today. Studies by state and Federal agencies, including the Bureau of Motor Carrier Safety of the Department of Transportation and the National Highway Traffic Safety Administration have verified the safety of these combinations when compared with any other vehicles on the highways. Insurance company executives and state safety administrators from their own experience and records strongly support twin-trailer safety. They have been operated over every type of terrain in all kinds of weather with no problems. Tests have shown that twin-trailers track and turn better than many other types of trucks, and that they have stopping ability which is at least comparable to any other combination.

The safety of 65-foot twin-trailer combinations has been verified by the Supreme Court in two important decisions.

In two states, Wisconsin and Iowa, failure of these states to permit 65-foot twin-trailers was challenged on the basis that such prohibitions represented a barrier to the free flow of commerce. The argument against the 65-foot twin-trailers was that they were unsafe. In both cases the safety arguments were found to be unfounded and the states were ordered to permit the 65-foot twin-trailer operations.

In the Wisconsin case (424 U.S. 429, February, 1978), the Court stated:

"On the record we are persuaded that the challenged regulations (prohibition against 65-foot twin-trailers) violate the Commerce Clause because they place a substantial burden on a speculative contribution to highway safety . . . The State of Wisconsin has failed to make even a colorable showing that its regulations contribute to highway safety."

In the Iowa case, there was a parallel finding that there was no justification for the prohibition against 65-foot twin-trailers on safety grounds. It is appropriate to quote at some length from the Iowa decision (101 S. Ct. 1309, January, 1981):

"Since Iowa's safety interest has not been demonstrated, and since its regulations impair significantly the Federal interest in efficient and safe interstate transportation, the Iowa law cannot be harmonized with the Commerce Clause. The record, including statistical studies, supports the District Court's finding that 65-foot doubles are as safe as 55-foot singles. And appellee demonstrated that Iowa's law substantially burdens interstate commerce. In addition to the increased costs of trucking companies in routing 65-foot doubles around Iowa or using smaller truck units through the state, Iowa's law may aggravate, rather than ameliorate, the problem of highway accidents. Iowa's restriction—resulting in either more smaller trucks being driven through Iowa or the same number of larger trucks being driven longer distances to bypass Iowa—requires more highway miles to be driven to transport the same quantity of goods. Other things being equal, accidents are proportional to distance traveled. Thus, if 65-foot doubles are as safe as 55-foot singles, Iowa's law tends to increase the number of accidents, and to shift their incidence from Iowa to other states. . . . Moreover, the history of the 'border cities exemption' suggests that Iowa's statute may not have been designed to ban dangerous trucks, but rather to discourage interstate truck traffic. A state cannot constitutionally promote its own parochial interests by requiring safe trucks to detour around it."

An important key to truck transport productivity and efficiency is freight density and the motor carrier's ability to match vehicle capacities to commodity densities or other special requirements.

The total volume of manufactured commodities moved by trucks in 1972 (Census of Transportation, 1972) was approximately 45.6 billion cubic feet. Forty percent of this volume was represented by commodities of densities less than 12 pounds per cubic foot; 30 percent of the volume consisted of commodities with densities less than 7 pounds per cubic foot, and approximately 20 percent of the total volume was represented by commodity densities of 5 pounds or less per cubic foot.

Because of the high dependence on truck transportation for moving the less dense commodities between 40 and 50 percent of all truck dispatches of general freight, carriers are cube-limited; i.e., the semitrailer will be loaded to its full cubic capacity long before it reaches the maximum gross weight.

The 65-foot twin trailer because of its greater cubic capacity is ideally suited to handle this growing volume of less dense commodities, as well as the large volume of less-than-truckload traffic. In the latter case, the twin trailer gives the motor carrier the added flexibility of spotting one semitrailer for unloading, while moving on with the other cargo unit. The increased payload involved in 65-foot twin-trailer operations translates directly into reduced operating costs, over and above the savings in fuel.

S. 1402 also provides that the states must allow a length of not less than 60 feet for a tractor semitrailer combination. Just as the need for additional fuel savings and operational efficiencies, particularly a greater need for national uniformity, supports the requirement that all states permit the 65-foot twin-trailer combination, a need exists for the industry to be able to operate the 60-foot single trailer combination on a national basis.

Today, 43 states permit the 60-foot single trailer combination and by the year's end, an additional state will permit this length (Appendix B). But inability to operate this unit in the 8 remaining states represents a barrier to a more efficient motor carrier transportation system.

This unit remains the basic "work horse" for the efficient movement of the thousands of commodities that are suited by density and other characteristics to movement by the single trailer combination.

As in the case of the 65-foot twin-trailer combination, there is no sound basis from the standpoint of safety or any other rational criteria for not permitting the operation of this unit on a regular basis in all states.

We strongly support, therefore, Mr. Chairman, those provisions of S. 1402 which would require the states to permit the use of 65-foot twin-trailer combinations and the use of 60-foot tractor semitrailer combinations.

However, we oppose the provision of S. 1402 which would limit the length of a semitrailer in any combination to 45 feet. We see no safety need nor other justifica-

tion for applying Federal length limits to the individual components of truck combinations.

In addition, the freezing of semitrailer length limits would seriously affect the flexibility and efficiency of motor truck transportation. Many commodities and movements have need for greater cubic capacities than provided in the 45-foot unit.

As we understand it, the call for separate length restrictions for the tractor and cargo units, and more particularly the suggestion that 15 feet be reserved for the space between the front of the semitrailer and the front of the tractor is to somehow assure that drivers will be satisfied with the way the truck handles and the space provided them in cabs. This is an important, but highly complex issue. It cannot be resolved satisfactorily through legislation.

In 1978, the Bureau of Motor Carrier Safety issued an Advanced Notice of Proposed Rulemaking concerning whether any adverse safety conditions were creating a need for establishing minimum cab dimensions for regulated commercial motor vehicles. The Bureau in its study has determined there is no immediately need to propose a final rule. Further, they have indicated that presently there is insufficient data about the many related issues to promulgate at this time, even a long-term rulemaking goal.

The issue, however, should be the subject of more research and study such as is now going on at the Department of Transportation with participation by the private sector. A specific legislative restriction such as provided in S. 1402 is not the answer.

S. 1402 would also revise the 96-inch width limit that has been in the Federal law since 1956. S. 1402 would call for a width of 102-inches which is more realistic and completely in line with the design capabilities of today's modern highway systems.

The limit of 96 inches was taken, in 1956, from the 1946 policy statement of the American Association of State Highwasy and Transportation Officials. At that time, the AASHTO policy was the only size and weight guideline that the Congress felt it could use in determining what Federal size and weight limits to place in the Federal statute. Since the 96-inch limit was ten years old in 1956, it is now thirty-five years old.

In the policy statement of 1956, AASHTO related a 96-inch width to a highway lane width of 10 feet. The policy statement at that time went on to say that 102 inches of width would be a desirable maximum as we began to provide lane widths of more than 10 feet. This is the case today since the minimum lane width on the Interstate System, and roads of similar design, is 12 feet. This was clearly recognized in the 1964 report of the Secretary of Commerce ("Maximum Desirable Dimensions and Weights of Vehicles Operated on the Federal-Aid Systems") which recommended a maximum width of 102 inches.

In conclusion, Mr. Chairman, we would like to make serious suggestions for technical changes in some parts of the bill which we believe will clarify the intent and will facilitate the accomplishment of the purposes of the proposed legislation.

S. 1402 would provide enforcement of the federally mandated lengths through civil action for injunctive relief to assure compliance with provisions of the law. We recommend that enforcement of S. 1402 be in the same manner as set forth in Section 127, Title 23, U.S. Code. This is the section of the existing Federal-aid highway statute which sets forth the existing Federal standards on weight and width. Under this approach, the enforcement of the provisions of S. 1402 would be through withholding of Federal-aid highway funds for states not adhering to Federal standards. In addition to being a more uniform approach to the enforcement of Federal requirements, we believe it to be more practical.

In order to make certain that the operation of 65-foot twin trailers would be assured, we further suggest that the bill be amended in such a manner that the states cannot prohibit the operation of motor vehicle combinations consisting of a tractor and a semitrailer pulling a full trailer or a converted semitrailer.

S. 1402 would require the operation of the specified combinations on the Interstate System and other Federal-aid highways as designated by the Secretary of Transportation. In order to assure the fullest operation of the specified combinations, we suggest that the bill be amended to state that the operation of these units would be permitted on the Interstate System and the Federal-Aid Primary System, plus other Federal-aid highways as designated by the Secretary of Transportation.

The final area of greater clarification would be that the definition of what is included in the 102 inches of width follow that contained in the memorandum dated February 12, 1981, issued by the Federal Highway Administration, Department of Transportation, in which it is stated that to forestall all confusion, the 96 inches be so interpreted as to be exclusive of safety devices, such as load-induced tire-bulge, rearview mirrors, turn signal lamps, and hand-holds for cab-entry/egress. We suggest that this interpretation of width be applied also to the new width of 102 inches.

APPENDIX A

STATES NOT PERMITTING 65-FOOT TWIN TRAILERS

Maine	Pennsylvania	South Carolina
Vermont	District of Columbia	Alabama
New Hampshire	West Virginia	Mississippi
Massachusetts	Virginia	Georgia
Rhode Island	Tennessee	New Jersey
Connecticut	North Carolina	

APPENDIX B

STATES NOT PERMITTING 60-FOOT TRACTOR-SEMITRAILER LENGTH LIMITS

State	Present length	New length limit
Connecticut	[1] 60	[2] 60
District of Columbia	55	
Florida	55	
Kentucky	[3] 57.75	
Maryland	55	
Missouri	55	[4] 60
New Jersey	55	
North Carolina	55	
By annual permit (Executive order)	60	
Virginia	56	
West Virginia	55	

[1] By annual permit (Executive order).
[2] Effective Oct. 1, 1981.
[3] Designated highways.
[4] Effective Sept. 2c, 1981.

[The following information was subsequently received for the record:]

AMERICAN TRUCKING ASSOCIATIONS, INC.,
Washington, D.C., October 1, 1981.

Hon. ROBERT PACKWOOD,
Chairman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: In my appearance before the Committee during the hearing on S. 1402, "Uniform Motor Vehicle Standards Act of 1981," a question was raised by Senator Cannon concerning the "BioTech" study that was made for the Department of Transportation relative to the safety of operations of the 65-foot twin-trailer combination as compared with the conventional tractor-semitrailer combination.

I indicated that we had made serious criticisms of the methods and procedures used in the "BioTech" study and had communicated these concerns to the Department of Transportation. Our communication to them we considered as privileged because they had asked for our comments prior to any publication of the study.

However, since the American Automobile Association, which organization we understand was also a privileged recipient of the study draft, introduced findings of the study in the record as part of their statement, we believe we should submit to the Committee the criticisms and comments we had made to the Department of Transportation in connection with the "BioTech" study.

Therefore, Mr. Chairman, we respectfully request that the enclosed material be accepted for the record as our comments as of this time on the "BioTech" study and the questions were raised concerning the draft report.

Sincerely,

E. V. KILEY.

Enclosures.

AMERICAN TRUCKING ASSOCIATIONS, INC.,
Washington, D.C., January 23, 1981.

Mr. DAVID SOLOMON,
Chief, Environmental Division, Federal Highway Administration, U.S. Department of Transportation, Washington, D.C.

DEAR MR. SOLOMON: As requested by you, I am writing to set forth our concerns about the study titled "The Effect of Truck Size and Weight on Accident Experience and Traffic Operations."

We believe that there are many errors and omissions in the study and that it should be reworked prior to release to avoid dissemination of misinformation about truck accidents in general, and about the safety record of tractor-semitrailer and full trailer vehicles (doubles) in particular. Our views and the reasons therefore are summarized herein.

I. THIS IS PRIMARILY A CALIFORNIA TRUCK ACCIDENT STUDY AND SHOULD NOT BE EXTRAPOLATED FOR THE NATION AS A WHOLE OR FOR OTHER STATES

We agree with the contractor's statement on pages 25 & 26 of Volume III that many of the results cannot be extrapolated to the nation as a whole because the sampling plan is biased toward certain states. However, we must go further and state that the results of the study are almost totally invalid for any state other than California because of the extreme bias of the sampling plan toward California:

77.9 percent of the total truck size and weight exposure records (25,008 of 32,103) are for the state of California;

95.3 percent (4,908 of 5,148) of the "doubles" exposure records are for California;

94.3 percent (2,397 or 2,540) of the straight truck and trailer/dolly exposure records are for California;

93.6 percent (5,180 of 5,537) of the straight truck records are for California;

73 percent of the tractor-semitrailer records (12,290 of 16,822) are for California;

58 percent (200 of 347) of the bobtail records are for California.

The study is, in effect, a California study and should have been treated as such. Data from California should not have been compared with, or merged with data from other states because of obvious differences in the nature of the data and in the nature of California truck operations compared to those in other states. For example:

Site 114 has extremes of mountainous terrain as do other California sites. Site 145 has extremes of traffic congestion. These sites do not typify truck operating conditions in the nation or in the other five states in the study group.

46 percent of the truck exposure records for California are for urban highways as compared with the other states in the study for which 33.7 percent of such records are for urban highways (P. 15, Volume III). This would result in a biased accident rate for combined urban-rural experience in California in comparison with other states, since urban highways tend to have higher accident rates than rural.

California truck types differ in many respects from those in other states and therefore have an effect on other traffic including other trucks, that is not felt in other states. For example, California has many "barnyard" doubles operations which consist of trailers used in fields and on highways to load and transport agricultural products. California also makes extensive use of truck-full trailer combinations and these are largely unknown except in Washington and Oregon.

II. FINDINGS IN THIS STUDY BASED ON COMPARISONS OF ACCIDENT EXPERIENCE OF DIFFERENT VEHICLE CLASSES ACCORDING TO ROADWAY TYPE AND OTHER CHARACTERISTICS ARE INAPPROPRIATE

The accident rate for one class of vehicles should not be compared with the accident rate for another type, even if such comparison is for similar types of highway and for vehicle operations within the same state, unless the data is more carefully controlled than is indicated in this study. Just as the biases of the state data in this study preclude national conclusions so may the biases of exposure elements for one class of vehicle preclude comparisons between vehicle classes. On page 36 of Volume III, footnote 1 of Table 6 states that the accident rates "are calculated by dividing the sum of the accidents for any given cell by the sum of the vehicles miles for the same cell." Use of this method of computing accident rates will favor any class of vehicle which has more favorable exposure factors than another class. For example, if a class of vehicles has high mileage on a low accident

highway such as site 142 and little or no exposure on site 143, which has a high accident rate, it will have an exposure advantage over another class of vehicle which has the opposite experience . . . high mileage on site 143 and low mileage on site 142. The comparison becomes one of highways rather than vehicles unless the exposure of vehicles by class is carefully measured and adjusted to assure equivalency between classes.

There is no indication that the contractor has considered anything other than gross mileages. Accident causation factors such as traffic congestion, condition of other drivers, weather and visibility seem to have been ignored and yet they can have extreme impacts on the accident experience of a particular highway.

For example:

> The overall truck accident rate for site 143 is 326 accidents per 100 million vehicle miles (based on 34 accidents, 549 days of exposure, 4,744 ADT and 4 miles length of site). The rate increased 100 percent to 659 accidents per 100 million vehicle miles for the two July-Sept. periods (based on 23 accidents, 184 days of exposure, 4,745 ADT, and 4 miles of length).
>
> For site 145, the overall truck accident rate is 423 per 100 million vehicle miles (based on 6 quarters—549 days, 9,235 ADT, 4.85 miles length of site, and 104 accidents). For the Jan.-March quarter the rate increased more than 100 percent to 882 accidents per 100 million vehicle miles (based on 31 accidents, 8,057 ADT, 4.85 miles length of site, 90 days of exposure).

We do not know what particular factors caused the changes in accident rates for these sites but the fluctuation reflects the extreme differences in accident rates that can occur within a site, and they reflect also the potential for differences from one highway to another. Classes of trucks which make heavy use of sites such as these during periods of high truck accident experience apparently have different elements of exposure that those trucks which may have reduced travel on such highways during the period of high accident rates. The classes should not be compared and especially not by averaging of rates or by adding and dividing exposure measures and accident numbers. Such comparison can be made only if the vehicle classes have very similar exposure for the same time period to the same elememts of accident causation.

On the basis of the foregoing we cannot agree with the findings in the Tables which compare accident experience by vehicle class and roadway type such as Table 6, and with the Tables which compare frequency of accidents by vehicle class and other factors, such as Table 21. Table 6 apparently reflects exposure and accident data from different states and different exposure sites for three specific classes of vehicles even though data for Straight Trucks and Doubles classes are California-based to a greater extent than for the Singles class, and even though the operations and exposure factors of Straight Trucks and Doubles may vary significantly from each other and from the Singles class in other respects. Table 21 has several problems. One is that the data appears to be based on combined urban-rural accident rates in more than one state. If so, any class of vehicles which has higher urban mileages would have unfavorable rates compared to other classes. Doubles, for example, are at a disadvantage in Table 21 because almost all of their exposure (95.3 percent) is based on California operations, and 46 percent of the California records are for urban truck operations. Since the frequency of urban accidents is generally greater than the frequency of rural accidents; since the focus in California is on urban accidents more so than in other states; and since doubles have a higher percent of exposure base in California than other classes the methodology of combining urban-rural rates in this Table, and at other points in the study results in an unfavorable bias toward Doubles when they are compared with other classes. Further, Table 21 is based on only 63 percent of the accident involvements and apparently the exposure data had to be comparably adjusted by some method and on the basis of someone's judgement to develop accident rates. The bias in the data is obvious by comparing the extent of data for the various classes. For Doubles, the data is 77 percent complete; for Singles the data is 65 percent complete and for Straight Trucks the data is only 58 percent complete.

III. THE EXPOSURE DATA HAS NUMEROUS ERRORS AND THEREFORE CANNOT BE CONSIDERED VALID IN DEVELOPING CONCLUSIONS ON ACCIDENT EXPERIENCE

There are several apparent deficiencies in the contractors assumptions and methods for developing exposure data:

ADT data was not available for each site and so the nearest ADT data on the same roadway was obtained (Page 18, Vol. III). Comparison of ADT data for US-101 as listed for site 151 and 152 shows a major difference in the ADT for the two segments of the same highway and raises the question of validity for ADT data that is not for the specific site.

The axle count sensing device for the photography sampling would select a 5-axle vehicle about 2½ times more frequently than its actual distribution in comparison with a 2-axle passenger car and so the technique is questionable (page 19, vol. III).

The effectiveness of the photography sampling was further reduced by problems (page 22, Vol. III) and the replacement manual count sampling was limited to 8 hours per day rather than 24. This probably had a major negative impact on accuracy of truck counts by vehicle class because of variations in truck use pattern by day and night.

The contractor states (page 26, Vol. III) that "the relative rates between variables (e.g. truck types) are real; the same biases apply to all the data." This is not true and may have adversely affected the contractor's conclusions. Mileages may be the same for a site length but the nature of truck operations may vary by type. Doubles, in a given area, may encounter more traffic in an empty condition than Singles travelling empty on the same highway but in a different direction or at a different time. Such variations are common in the trucking industry by type of vehicle and the service it provides, whether it be pick-up and delivery, truckload or LTL, rural or urban.

There was apparently an extensive amount of guessing about the weights of trucks in the sampling group. California, which had 77.9 percent of the total truck size and weight exposure records did not have scales at 8 of the exposure sites and so the weight determinations were based on driver estimates given at three truck stops and at a toll facility. Four locations had no source of weight information. Scales were located near 12 sites in California and were the source of some weight information, but the contractor notes (Page 29, Vol. III) that "Weigh station operators, especially when traffic was heavy, frequently waved through trucks that were empty. Because of this, there is underreporting of empty trucks in the exposure data."

Some of the errors and omissions in the weight data are obvious:

Of 195 "Doubles" combinations listed at 30,000 pounds or less (page 33, Vol. IV) 24 appear to be too light in weight based on standard vehicle weights of at least 12,300 pounds tractor weight, 6,600 pounds trailer weight and 2,000 pounds dolly weight.

The data on page 33 appears to indicate 195 empty "doubles" whereas the data on page 58 indicates that by cargo configuration at least 1,118 vehicles would be empty 50 percent of the time. On the basis of data on page 58 the number of empty "doubles" vehicles would be at least 564, almost triple the number shown on page 33.

Bobtail tractors should weigh 12,300 to 15,000 pounds. This study shows, on page 33 of Volume IV, bobtail tractors ranging up to 90,000 pounds.

The weight of individual cargo units is unknown, in a range of 55 percent to 69 percent (pages 35, 36, 37 of Volume IV).

Any of the data that is based on weight is suspect. There is no reason to believe that weight data is valid in view of the foregoing and in view of the contractor's admission that "the size and weight data could not be reviewed as thoroughly as the accident data." (page 23, Vol. III.)

As with the weight data, there are problems with the data on length, although not to the same extent, Data on the over all length of vehicle is available for 75 percent of the 32,000 vehicles sampled. The omission of data is greater for some classes than for others. It is not apparent from the data if such omissions affect frequency rates by clas and/or highway type but there is such a possibility. Length data is available for 4,427, or 86 percent, of the Doubles class. Length data is missing for cargo units in a range of 69 percent to 88 percent (pages 39 to 42, Vol. III).

We agree with the contractor that "for all trucks combined and within each truck type, it would be erroneous to draw conclusions regarding the effect of length alone." (Page 31, Vol. III). In the past there has been no evidence that length affects safety and we find no valid data in this study to indicate otherwise.

IV. THE ACCIDENT DATA IS IMCOMPLETE AND THEREFORE NOT RELIABLE

The contractor notes that police accident report forms were deficient and that it was necessary to develop a follow-up accident investigation procedure (p. 12, Vol. III, Accident Experience of Large Trucks). The contractor also notes that accident forms and reports were reviewed to ensure it was a large truck, in-site and data was properly coded. Only reports that were totally wrong were returned to Field Investigators (P. 23, Vol. III).

Apparently here were many reports utilized that had serious omissions, even though they were not 'totally wrong.' The contractor's data in Appendix C shows: the gross weight of the truck in an accident was not known in 53 percent (1135 of 2112) accident involvements (Page E-7); the total length of the truck was not known

in 48 percent (1,016 of 2,112) of the involvements (Page E-7); the cab type was not known for 43 percent of the combination vehicles and bob-tail vehicles (716 of 1,679) (Page E-8).

These apparent omissions in the accident data raise the question of what other problem there may be with the data, such as:

Table 21 (page 56 of Vol. III) shows cargo area configuration accident data based on 62 percent of the involvements (1,325 of 2,112). This seems to indicate deficiencies in the accident data relative to cargo area configuration of at least 38 percent of the trucks in accidents.

Table 9 (page 38 of Vol. III) relates accidents, gross vehicle weight and truck type. The number of accidents for doubles is 127, 49.6 percent of the total Doubles involvements. The number of accidents for Singles is 617, 46 percent of the total Singles involvements. The number or involvements for Straight Trucks is 142, 43 percent of the total Straight Truck involvements. This seems to further indicate an extensive lack of information about the gross weight of each of the various vehicle types.

Additionally, we believe there is a strong possibility that there is confusion in the accident data between doubles and truck-full trailer units. This confusion may result from the identification of both these vehicle types in the "Accident Study Data Collection Forms" as "Doubles" (Volume IV, Page 4), and also from the use of field investigators who might, through lack of experience in the trucking industry, make errors in the identification of these two vehicle types.

V. FINDINGS RELATIVE TO THE ACCIENT EXPERIENCE OF "DOUBLES" ARE OBVIOUSLY IN ERROR AND SHOULD BE REMOVED OR CORRECTED BEFORE THE STUDY IS RELEASED

Previously herein we have pointed out errors in the accident and exposure data that may affect any or all of the vehicle classes. The study appears to be most biased in its treatment of "Doubles" by virtue of:

1. Under-reporting of empty vehicles for the Doubles class in developing exposure data. (See comments herein under Part III.) This would result in a higher than actual accident rate for Doubles vehicles at lower weight levels.

2. Possible over-reporting of Doubles in the accident data as a result of identifying both the Truck-Full Trailer and the Tractor-Semitrailer-Full Trailer as Doubles in the "Accident Study Data Collection Form." (See comments herein under Part IV.) This would result in a higher than actual accident rate for the Doubles class at all weight levels.

3. Inclusion of data for Doubles units used in agricultural activities (field transportation and highway transportation). These Doubles operations are not typical of those throughout the nation. They may have a higher rate of defective equipment because of field use and a higher rate of empty transportation because of the lack of backhaul commodities. Both of these factors could skew the Doubles data.

4. Comparing Doubles accident rates, which are California-based to a greater extent than any other class of vehicle, with accident rates of classes which accumulate exposure and accident data in states with a better truck accident rate than that developed for California. This results in the Doubles class having a rate that appears higher by such comparison than is actually the case.

The adverse impact of class comparisons on Doubles is best illustrated by comparing California-Nevada accident rates for singles and doubles. Such rates are the basis for Table 8 specifically, and generally for other Tables because of the limited data sources for Doubles:

(a) The overall truck accident frequency rate for California is 2.75 times the overall rate for Nevada . . . 1.83 accidents per 1 million vehicle miles for California compared to a Nevada rate of .6656 accidents per million miles.

The accident rate by each roadway type is much higher for California than for Nevada:

Roadway type	Rate per million miles	
	California	Nevada
Rural freeways	1.62	0.435
Rural nonfreeways	2.26	.561
Urban freeways	2.31	1.970
Urban nonfreeways	1.41	.602

(b) The combined (California & Nevada) mileage exposure for Doubles is 82,297,700 of which 87 percent was accumulated in California.

The combined mileage exposure for tractor-semitrailers is 258,864,948 of which 68 percent was accumulated in California.

The ratio of mileage accumulated in California as compared to Nevada is also much greater by roadway type for Doubles than for tractor-semitrailers:

RATIO OF MILES ACCUMULATED IN CALIFORNIA AS COMPARED TO MILES ACCUMULATED IN NEVADA

Roadway type	Doubles	Tractor-semitrailer
Rural freeways	8 to 1	3.08 to 1.
Rural nonfreeways	3.39 to 1	1.06 to 1.
Urban freeways	8.17 to 1	4.0 to 1.
Urban nonfreeways	5.45 to 1	2.03 to 1.

From the foregoing comparison of California and Nevada accident rates as developed in the study it is obvious that the potential for truck accidents on the various types of highways in Nevada is far less than the accident potential for the same types of highways in California. It is obvious that the tractor-semitrailer class has a lower accident potential than the Doubles class simply because it has a greater percentage of its mileage accumulated in Nevada than does the Doubles class.

Therefore, the Table 8 comparison of Singles and Doubles accident rates, based on combined California-Nevada data by roadway type, automatically favors Singles. The finding that "Doubles have a higher mean accident rate than Singles" is, at best, misleading and should be eliminated from the study.

Similarly, the findings and rates from other Tables which compare accident rates of Doubles with those of classes which are based, in whole or in part, on data from states other than California are also misleading and probably inaccurate. They may also suffer from other data problems discussed above. These findings and rates should be eliminated from the study, or corrected prior to its official release. They include:

1. Table 6, because the accident rates are not developed from comparable data bases for the classes.

2. Table 9, because the Table covers less than 50 percent of the accidents in the study, because the rates are not developed from comparable data bases for the classes, because urban and rural rates appear to be combined, and because the Doubles data relative to empty vehicles may be incorrect.

3. Table 10, because weight data based on accidents and on exposure may be incorrect and because the use of California-Nevada data as the basis for comparing Doubles and Singles accident experience is improper and misleading.

4. Table 11, because of problems with weight data and because of problems in comparing classes with different exposure bases by state.

5. Table 12, because the accident rates are not developed for comparable data bases for the classes.

6. Table 14, because the rates are not developed from comparable data bases for Singles and Doubles and because of omission of more than 60 percent of the accident data in developing the data.

7. Table 21, because the rates appear to be a mix of urban-rural accident experience, because only 63 percent of the accidents in the study are represented in the Table, because there appears to be a serious error in the rate for Tank Doubles (possibly a result of misclassifying vehicles) and because the data bases for the classes do not appear to be comparable.

In conclusion, we recognize the good faith efforts of the contractor to develop truck accident information that is representative for classes of vehicles. However, there has been a lack of success because of the numerous unknowns in the accident data and in the exposure data. Apparently the contractor believes that errors and omissions in such data will average out so that there is no bias for a particular class of vehicles. We believe, to the contrary, that a particular class of vehicles can be very adversely affected by errors and omissions because of variations in the factors that influence the data for that class. Factors such as major differences in urban or rural operations, the preponderance of exposure data in a particular state and the potential for human errors in data accumulation for a particular site or sites where a particular class of vehicle has more extensive operations than other classes, all can greatly influence comparisons between vehicle classes.

We believe that comparisons of accident experience between classes of vehicles is possible only if the exposure of vehicles by class is carefully measured and adjusted to assure equivalency between classes for the comparisons made. There must be similar comparability for the accident data. Appropriate adjustments must be made

in any set of data when omissions exist in the other set of data. The data in many Tables in this study indicate omissions but they do not reflect appropriate adjustments of rates.

We respectfully urge that the Federal Highway Administration, as the contracting agency for this study, withhold release of the study to permit correction of the data and revisions so that the final version of the study will more accurately reflect truck accident experience.

Sincerely yours,

WILLIAM E. JOHNS.

SPECIAL PAPER: COMPARISON OF BIOTECHNOLOGY FINDINGS WITH OTHER SOURCES OF TWIN-TRAILER DATA

The Bio-Tech Study makes two findings that are irreconcilable with known information. It shows a twin accident rate two to four times that of semitrailers. It finds empty trucks to be less safe than loaded trucks. In the case of twin trailers, empty rates in the study are many times those for loaded twin trailers.

The differences found in the study are so large that it would be impossible for them to exist without being generally known in the industry, among state highway officials, among truck insurers, and without having shown up in prior studies. For instance, if the empty accident rates were as much worse as the study suggests, a carrier who runs empty twins 5 percent of the time would have most of its accidents with the empties. That fact could not escape notice. Similarly, if twin accident rates were as much worse than semi rates as the study finds, carriers, law enforcement officials, and insurers could not fail to notice it.

It is far more probable that the Bio-Tech Study is wrong than that everyone else is.

1. Carrier experience.—Carriers who operate both twins and semis report comparable or lower accident rates for twins.[1]

2. Insurers.—The major insurance companies who insure both twins and semis have uniformly found twin trailers to have the same or slightly lower casualty experience as semis.[2] If the Bio-Tech Study were correct, insurers would be suffering tremendous losses on their twin trailer insurance rates.

3. State highway officials.—Numerous state highway officials have testified that their state's experience has indicated twin trailers to be as safe or safer than

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[1] 1. *Kassel* v. *Consolidated Freightways*, 67 L.Ed.2d 580 (Mar. 24, 1981), Appendix pp. 650–654. A very large study by the Bureau of Motor Carrier Safety compared accident rates by equipment type for carrier using both types of equipment. "Safety Comparison of Doubles vs Tractor-Semitrailer Operation" (November, 1977) Bureau of Motor Carrier Safety, Federal Highway Administration, U.S. Department of Transportation.

[2] "As a loss prevention specialist, I wish to comment on the relative safety of twin-trailer truck combinations. Our company's statistics show that the safety record of twin trailers is even better than that of conventional equipment." James B. Spice, Vice President, Loss Prevention, Carriers Insurance Company, Des Moines, Iowa.

"Our company is a large independent filer of rates and rating formulas. In these independent filed rates we rely in our filing most strongly on our own experience. We make no distinction whatever in rating our power vehicles for liability as to tractors with one or with two trailers. We make no distinction under our ratings for tractor-trailer units for width, weight, or length." John Sullivan, Regional Commercial Manager, Truck Underwriters Association and Truck Insurance Exchange, Kansas City, Kansas.

"During the last five and one-half years we have carefully watched the operation of twin trailers. At no time during this period have we seen the slightest indication that the operation of twin trailers created any additional safety hazards as compared to the operation than they have with their conventional 40 foot trailer combinations. The fleets that we insure have consistently reflected lower accident frequencies with their twin trailer operation than they have with their conventional equipment." R.G. Begeman, Vice President, Tranport Insurance Company, Dallas, Texas.

"From a purely statistical point of view the use of doubles has no effect whatever upon liability insurance rates—in fact they ultimately will reflect a reduction in rates since operators can have the advantage of operating shorter euqipment in congested areas." Mike McCrary, Vice President and General Manager of Carriers Insurance Company, Des Moines, Iowa.

"Our Safety Department unequovically feels that doubles are safe and efficient and that they pose no additional safety hazard to the motoring public. During the period t' doubles have been introduced in the west, the overall safety record of fleets insured by Tra port has been amply demonstrated by the fact that their insurance rates have been consistently lowered. The bulk of our accounts are basically on a cost-plus insurance program and this reduction in the rate is a direct reflection of improved safety in operation." Robert W. Stevenson, President, Transport Idemnity Company, Los Angeles, California.

"Sixty-Five Foot Twin Trailers On Iowa Highways" (April, 1975) Iowa Department of Transportation, *Kassel* v. *Consolidated Freightways*, 67 L.Ed.2d 580 (Mar. 24, 1981) Appendix p. 594–595.

semitrailers.[3] A 1975 poll of 28 states then permitting twin trailers, conducted by the Iowa Department of Transportation, indicated no safety or enforcement problems.[4] Active and retired federal officials from the Bureau of Motor Carrier Safety have testified that their experience and records indicate twins to be as safe or safer than semis.[5]

4. Litigation.—The issue of twin trailer safety has been litigated in Wisconsin and Iowa. Both cases were appealed to the Supreme Court.[6] In Wisconsin, the Supreme Court found the evidence on twin trailer safety to be overwhelming. The Court acknowledged that "a massive array of evidence" had been presented to disprove the state's contention that regulations against doubles equipment contributed to highway safety. The State of Wisconsin did not actively challenge the safety evidence. In the Iowa case where the safety evidence was fiercely challenged, the trial court said "the evidence convincingly, if not overwhelming, established that the 65-foot twin is as safe as, if not safer than the 60-foot twin and the 55-foot semi." The Eighth Circuit Court of Appeals and the United States Supreme Court affirmed the District Court in this conclusion.

5. Prior statistical studies.—There are six prior principal statistical studies conducted of twin trailer safety. Every study has found there to be no statistically significant differences in the overall twin or semi rates or has found the twin rate to be significantly below the semi rate. The studies are summarized in the attached sheet.

The studies include a prior study conducted in California by Bio-Technology. The matched pair analysis is the most closely controlled study conducted, comparing semi and twin rates over the same routes and the same periods of time with drivers of similar age and experience. It found no significant difference in accident rates.

All of this information strongly suggests that the Bio-Tech Study is wrong. Close examination of the study indicates major flaws, sloppy work, and unlikely assumptions.

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[3] Edward Kynaston, Deputy Chief Commander, California Highway Patrol Enforcement Services Division; Maj. James Adkins, Kansas Highway Patrol; Col. James Crawford, Chief, Minnesota State Patrol; Thomas Doyle, former Director-State Engineer, Nebraska Department of Roads; Col. Dennis Eisnach, Superintendent of the South Dakota Highway Patrol; Francis C. Marshall, Assistant Commissioner of Minnesota DOT; Claud McCamment, Retired Director, Kansas Highway Commission; George Moberly, Engineer of Traffic, Illinois Department of Transportation; and Arlan Hicks, Transportation Safety Administrator, State of Kansas, *Kassel* v. *Consolidated Freightways*, 67 L.Ed.2d 580 (Mar. 24, 1981), Appendix pp. 50, 67, 56, 82-83, 87-88, 59, 74-77, 62-63, 70.

Myron E. Bothun, General Counsel, North Dakota Highway Department; Joe E. Sol, Chief, Montana Highway Patrol Bureau; Col. F. J. Wickam, Director, Wyoming Highway Patrol; Ray Lower, Highway Transportation Officer, Idaho Transportation Department; Capt. R. E. Sherman, Weight Control Officer, Washington State Patrol; Robert Hamilton, Permit Director, Oregon Highway Department; John C. Amthor, Commanding Officer, Safety and Traffic Division, Michigan State Police; Robert W. Patton, Staff Maintenance Superintendent, Colorado Department of Highways, *Raymond* v. *Rice*, 434 U.S. 429 (1978), Appendix pp. 157, 159, 161, 163, 164, 166, 167.

[4] *Kassel* v. *Consolidated Freightways*, 67 L.Ed.2d 580 (Mar. 24, 1981) Appendix p. 584, 586.

[5] Kenneth Pierson, Deputy Director, Bureau of Motor Carrier Safety, Federal Highway Administration; Ernest Cox, retired Deputy Director, Bureau of Motor Carrier Safety, *Kassel* v *Consolidated Freightways*, 67 L.Ed.2d 580 (Mar. 24, 1981) Appendix p. 23, 45.

[6] *Raymond* v. *Rice*, 434 U.S. 429 (1978); *Kassel* v. *Consolidated Freightways*, 67 L.Ed.2d 580 (Mar. 24, 1981).

PRINCIPAL STATISTICAL STUDIES

	Geographic region	Time period	Miles	Basis miles	Accident basis	Accident rate	Injury rate	Fatality rate
U.S. DOT Bureau of Motor Carrier Safety.	National	1969–70	Over 3 billion	Actual reported	Over $2,000 or injury or fatality.	Twins significantly below semis.	Twins significantly below semis.	Twins significantly below semis.
Iowa DOT	do	1974	N/A	Actual reported	Unknown	do	Unknown	No significant difference.
Bio Technology (1978):								
Uncorrected			Estimated	Estimated from 11 rural, 4 urban stations.	Injury or fatal accidents on CHP patrolled roads only (estimate all accidents).	No significant difference	No significant difference	Twins significantly higher than semis but no significant difference in fatal accident rate.
Corrected to exclude urban bias.	California	1974	From counts	Estimated from 11 rural, 4 urban stations.	do	do	do	No significant difference.
Ton-mile basis (uncorrected).				Estimated from 11 rural, 4 urban.	do	Twins significantly below semis.	Twins significantly below semis.	Do.
California Highway Patrol.	California	1972	Estimated from counts.	Estimated from counts at counting stations for CHP patrolled roads only.	Rural CHP injury or fatality.	No significant difference in fatal and injury accident rates.		No significant difference in people killed and injured per accident with twins and semis.
Consolidated Freightways 1970–78.	National	1970–78	Over 2 billion	Actual reported	All over $250 or injury or fatality.	Twins significantly below semi.	No significant difference	No significant difference.
Consolidated Freightways 1978 (matched pair analysis).	do	1978	Over 100 million	Actual-precisely controlled and matched travel by semis and twins.	All	No significant difference	do	Do.

Summary of Problems With BioTechnology Study

Accident Experience of Large Trucks

1. The findings of the study conflict with other studies, motor carrier experience, court findings, insurance rates and opinion of law enforcement personnel.
2. The sites selected are not representative of the nation or of any of the states in the study.
3. No controls were used to insure that variations in accident rates for various truck types and characteristics are not the results of variations in the proportion of travel through the more hazardous sites.
4. The accidents came from a very small base. Over 50 percent of the California twin accidents came from three sites, two hazardous mountain passes and the Oakland Bay Bridge.
5. The study was not controlled for, and did not compensate for, differences in traffic by time of day, day of week, or be season, even where the data indicates such variations.
6. The study does not compensate for differences in operations that influence accident rates. For example, trucks used in farm operations are compared to those used in for-hire operations, and operations with longer vehicles in the West with shorter vehicles in the East.
7. Very large amounts of exposure data are missing. The missing data is important.
8. The weight exposure data is obviously wrong because empty or lightly laden trucks were grossly undercounted.
9. The data collected is inconsistent. Ther various tables in the study have wildly fluctuating rates as the result of missing or inaccurate data.
10. Much of the methodology, particularly the handling of data collection problems and statistical representations are inadequently explained or glossed over. Rates are often given without presenting the underlying numbers.
11. The study aggregates accident rates from various states to present numerous comparisons through the criteria for reporting accidents varies from state to state.
12. The study makes numerous assumptions, e.g., that an 8 hour sample is the same as a 24 hour sample, that truck type and characteristics do not vary with direction of travel, that state Average Daily Traffic information is accurate.
13. The study contains clearly erroneous data and makes demonstrably false statements regarding which states allow 65' twins.

In total, the problems are so numerous as to forbid reliance on the study.

I. PROBLEMS WITH SELECTION OF STUDY SITES

Conclusion: The contractor focused on selection sites with extremes of accidents, truck mileages, and unusual truck size and weight. The sites selected are not nationally representative nor are they representative of any state. Consequently, the study is useless as a basis for conclusions. Moreover, the use of atypical sites heavily weighted the study toward a few very dangerous sites for each roadway type. Unfortunately, the study does not separately determine exposure at those sites for the various comparisons, making comparison of the rates found for various vehicle types, weights, or lengths meaningless.

1. The contractor admits that the study is not representative by stating that the study "should not be construed as being representative of the United States". (Vol. III, Page 25). The contractor provides no justification at all for considering the study, or any part of it, as being representative of any state, including those states that are part of the study.

2. The six states in the study were not selected as being representatives of truck mileages, truck accident experience of types of truck operations:

Maryland: selected to conduct pilot test of techniques used in the study;
Michigan: selected because of unusually high weight limits and unique types of vehicles (Michigan singles and doubles);
Texas: selected because of high truck mileages;
Nevada: selected because it allows triple trailers;
Pennsylvania. selected because of high truck mileages, lowest gross weight allowances and "Highest annual accident frequency."
California: selected because of high truck mileages and high incidence of double trailer operations. (from vol. III, page 9)

3. The objective in selecting 78 sites was not to obtain those which were typical of truck operations on a state or national basis. According to the contractor, "The target was 1,500 truck accidents." (Vol. III, Page 8).

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4. In each state, site selection was biased toward choosing "one site from each accident category." (Vol. III, Page 12). Selection was not based on what is typical for a state.

5. Site selection was biased by the plan to use photography to determine the number of trucks of various types using the study site. For example, each site needed to have at least one bright light for night time pictures. (Vol. III, Page D-9). Such a site is not typical of most rural highway locations.

6. The selection process obviously was biased toward California. The study, is, in effect, a California study:

77.9 percent of the total truck size and weight exposure records developed in the study (25,008 of 32,103) are for the state of California;

95.3 percent (4908 of 5148) of the "doubles" exposure records are for California;

67 percent of the tractor-semitrailer records are for California;

Over 90 percent of the records for each of the other vehicle types are for California (except for bobtails of which 200 of 347 records are for California);

10 of the 12 weight stations used to collect weight data are in California; California because of different truck regulations and local conditions is not representative of the nation. For instance in California, unlike other states, twins are more commonly used for agricultural hauling than semis. Agricultural use constitutes twice the proportion of twin traffic that it does in other states. (1977 Census of Transportation, Truck Inventory and Use Survey, Table 3, p. 14 and p. 5-12).

7. Several other factors influenced the selection of study sites. These were factors that the contractor considered essential to the conduct of the study. They did not include consideration of whether or not truck operations at the sites under consideration were representative of the state or national trucking industry. (Vol. III, Page 12).

8. Because the contractor was searching for extremes of accident and exposure data many of the sites were extreme by nature. Thus, most of the accidents came from just a few, unusual sites. For example:

Three high accident rate California sites (two mountain passes and the Oakland Bay Bridge) accounted for over 50 percent of all California twin accidents (Sites 114, 123, 145, Vol. III pp. B-11, B-15, B-23, FHWA computer printout "TRAX156 1/08/81").

Site 114 (Vol. III, Page B-11) which is known as the Grapevine has the longest and steepest grade in the nation. It accounts for 28 percent of the California accidents and for 57 percent of the California rural Freeway Double and Single accidents.

Site 145, the San Francisco Oakland Bay Bridge (Vol. III, Page B-23) accounted for 16 percent of the California accidents in the study and 49 percent of the California Urban Freeway Double and Single accidents. It has the highest average daily traffic count (184,705 vehicles) of any site in the study.

Site 241, the Baltimore Harbor Tunnel road (Vol. III, Page B-30) accounts for 69 percent of the Maryland accidents. Its average daily traffic is relatively high at 65,006 vehicles per day. Its traffic hazards include a route that combines a tunnel with industrial mileage.

Obviously none of these sites can be considered as nationally representative or as representative of trucking operations or accidents in their respective states. Yet they just as obviously have the major influence on the data in the study.

9. The sites vary widely in general hazard, both overall and within each roadway type. The variation in accident rates for all California sites exceeds a factor of 50, and within roadway types variations by a factor of 10 to 30 are common. The contractor made no effort to determine that the proportion of exposure to these dangerous sites was consistent for vehicles of different type and characteristics. Accident rates will obviously be affected by varying exposure to these dangerous sites, preventing valid comparisons.

II. PROBLEMS WITH TIME ELEMENTS OF THE STUDY

Conclusion: There is inconsistency in various time elements related to collection of and measuring data. This makes the exposure data invalid as a base for determining truck accident rates. It probably accounts for low levels of exposure data which lead to high accident frequency rates for certain vehicle types.

1. Exposure data is based on five quarters. Accident data is based on six quarters. The two measures should be for the same time frames for a valid measure of accident rates (Vol. IV, Page 10).

2. The contractor apparently estimated exposure data for the first quarter. Estimated data for any quarter would not be reliable because of the possibility of major differences from one quarter to another and from year to year in truck operations.

3. Exposure and accident data based on six quarters is undesirable because the duplication of data from a particular quarter may unduly impact the total data. For example, duplication of the July-September quarter results in an unusually high number of accidents for California. 43 percent of the 641 California truck accidents occurred in the two July-September quarters. (Vol. III, Pages B-8 to B-27).

4. The amount of time spent on sampling truck exposure, and the time periods for such sampling varied widely among the sites. Therefore, comparison of rates from one site to another is not proper, nor is it proper to aggregate data on a statewide basis, by vehicle type or on any other basis where such differences exist in the sites:

(a) At some sites, data was collected for less than the planned exposure period of one full week because of equipment malfunctions (Vol. III, Page 22). Truck exposure varies widely from day to day and so exposure data must be collected throughout the week. The variation of operating practices from one vehicle type to another by day of week negates the possibility of assuming that an omission of daily data for a particular day for one vehicle type is offset by the same omission for another vehicle type. Accident data for this study is on the basis of a full week and the exposure data should have been, also. Otherwise, the site for which data is missing should have been eliminated from the study.

(b) At some sites, equipment malfunctions prevented the plan of monitoring on a 24-hour basis. This resulted in manual counts of truck exposure that were limited to 8 hours of counting traffic, in one direction only (Vol. III, Page 22). This is undesirable because the type and frequency of truck traffic varies according to the times of the day, also. Some truck types travel predominantly in the daytime, whereas others are involved heavily in night-time travel. It is essential to measure exposure on a 24-hour basis to assure that the exposure measure is accurate. Some of the high accident rates shown in this study for certain vehicle types are probably a result of the vehicle's exposure not being properly measured rather than being a result of over-involvement in accidents.

(c) Adequate monitoring of night-time truck operations was a problem also because of apparent limitations in the camera equipment. The contractor states that "high blur in combination with low level illumination may make it impossible to determine vehicle configurations" (Vol. III, Page D-11).

In other word, if there were problems with light and shadows combined with high vehicle speeds, the photo would not be clear enough to indicate if the vehicle was a straight truck, tractor semitrailer or twin trailer unit. The result of this limitation is an inadequate measure of vehicles on the road at night according to vehicle type. On rural roads at night, such vehicles are predominantly combination vehicles.

5. State ADT (average daily traffic) counts appear to be a weak basis for determining the total number of trucks travelling through a study site:

(a) State ADT data may be estimated. Yet the contractor states "the accuracy of the ADT value is as important as the accuracy of the classification distributions." (Vol. III, Page 18.) In contradiction of his own statement of the need for accuracy, the contractor admits that if ADT data were not available for a study site he used the ADT data from another segment of highway (Vol. III, Page 18).

As an example of the probability that ADT is largely an estimate by the state, note the duplication of numbers for total ADT, truck ADT and ADT for other vehicles, for different quarters at Site 123 and Site 131 (Vol. III, Pages B-15 and B-16).

(b) State ADT data may have been seriously out of date at the time of the study. If so, the data would not reflect changes in traffic density resulting from fuel shortages, increased numbers of drivers, increased truck operations and exposures, etc. States make traffic counts at infrequent intervals on particular stretches of roadway and so it is possible that much of the truck exposure data in this study is based on traffic counts dating back to 1973 or earlier. If the ADT data are wrong then the contractor's estimates of truck travel are wrong. The end result would be that accident rates are wrong.

III. PROBLEMS WITH SAMPLING DATA DEVELOPED TO DETERMINE DISTRIBUTION OF VARIOUS VEHICLE TYPES AT THE VARIOUS SITES

Conclusion: The quantity, types and weights of trucks vary by season, by day of the week, and by the time of day. The contractor failed to adequately sample to account for the variations, or to compensate for them.

1. Some sites were monitored for only part of a week. Therefore, the distribution of trucks by type throughout the week was not known at many sites (Vol. III, Page 22). This could have resulted in lower exposure levels than would be expected for

some vehicle types, and in worse accident rates for those types. It could also have resulted in some vehicle types appearing to have better accident rates in comparison with those that had lower than actual exposure rates.

2. The potential for human error was constantly present in the program. Human error was the cause of failure to obtain accurate data on empty vehicles passing through California weight stations (Vol. III, Page 29). The potential for human error was introduced into the monitoring program when equipment failure forced the use of field personnel to monitor at numerous sites. An additional problem was that such monitoring was for only eight hours a day. The result of limited daily monitoring would be lower than expected levels of exposure data, especially for vehicles with extensive night-time operations. The consequences would be the same as those listed in #1 above.

3. Night-time monitoring also suffered because of limitations of camera equipment at night (Vol. III, Page D–11). All in all, it appears that night-time monitoring was a very weak link in the monitoring program and that those vehicle types which have extensive night-time operations would suffer lower than actual exposure rates and higher than actual accident rates because accident data was collected for all hours of the day and night.

4. Apparently both human monitoring and camera monitoring was limited to one direction of travel (Vol. III, Page 22 and Vol. III, Page D–11). Human monitors were directed to monitor only one direction of traffic. Camera installers were told that "the preferred view is toward the vehicle front rather than the rear" and this implies one direction of monitoring. This means that a great number of trucks, perhaps 50 percent or more of various configurations, were not counted in the exposure data and so the data is deficient . . . especially in view of the fact that apparently accident data for both directions of travel was counted at each site. The combination of low levels of exposure data and high levels of accident data would result in higher than acutal rates.

5. It appears likely that some trucks were miscounted because of the manner in which the photographs of truck distribution in traffic were obtained. A counter told the camera when to take a picture. Obviously, a two-axle vehicle would seem to be twice its volume if each axle activated the camera and a five-axle vehicle would seem to be five times its volume. If the count was determined to be one vehicle for each two axles, the two-axle vehicle would be shown in its proper distribution, but five-axle vehicles would be counted 2½ times more often than their frequency in traffic. The contractor does not explain how the counter compensated for multi-axle vehicles to assure that such vehicles were accurately shown according to their distribution in traffic. If the methodology for compensating for numerous axles was incorrect, multi-axle vehicles might show up better or worse than actual in the exposure measure.

IV. PROBLEMS WITH SIZE AND WEIGHT DATA

Conclusion: Size and weight data is missing for large segments of the sample. The methods used to gather data are unreliable, and in many cases inappropriate. The data gathered has blatant errors that imply poor quality. One of the principal findings of the study—that empty vehicles are less safe than loaded vehicles is probably the result of errors in data gathering rather than real differences.

1. Weigh stations were the only definite source of weight data (Vol. IV, Page 8).

A. Scales were available at only 18 of the 78 sites (Vol. III, Pages B–8 to B–85).

1. Only 12 scales were used to obtain weight data for the 18 sites, even though the sites differed in their characteristics, according to Urban, Rural, Freeway, Primary etc. This probably resulted in a mixture of weight exposure data that could not be assigned to the proper highway type and which therefore should not have been used in developing accident rates related to weight.

2. Only 35 percent of the average daily truck traffic covered by the study had access to scales. This is based on ADT of 219,856 trucks for all sites. The percentage of trucks for which definite weight data was obtained was probably far less than 35 percent because scales are not continuosly open.

3. Scales are often located for one direction of travel only. For enforcement purposes they are located on the most heavily laden direction. The study assumes the travel in both directions is identical.

4. Most of the data on empty vehicles was obtained at scales in California and is erroneous because of the California practice of allowing empty or near empty vehicles to pass by the scales without being weighed (Vol. III, Page 29). The contractor failed to count these "passby" vehicles. Consequently empty and near empty vehicles are grossly underestimated.

B. Weight information from other sources (Vol. III, Pages B–8 to B–85).

1. Definite weight information was not available at truck stops; rest areas and toll booths (Vol. IV, Page 8). There were 27 sites which had such facilities as the only source of information.

2. There were 33 study sites for which no source of data was available.

2. Quality of weight data

A. 78 percent of size and weight data was collected in California. 74 percent of the California Average Daily Traffic had access (with limiations as noted earlier) to scales. The study is almost totally oriented toward California truck operations.

B. Data for the 65 percent of trucks which did not have access to scales is missing or in many cases appears to be the result of bad guesses:

1. 55 percent to 60 percent of trailer weights are unknown (Vol. IV, Pages 35 to 38).

2. Some vehicle types are shown at weights which are totally unrealistic (Vol. IV, Pages 33 and 34). These include: Bobtail Tractors, which generally weigh less than 20,000 pounds are shown at weights above 100,000 pounds; twins and tractor-semi-trailers are shown at weights below 10,000 pounds even though such weights are impossibly low.

3. The number of empty doubles shown in Volume IV, Table 21, does not agree with the data in Table 44 of Volume IV. Not counting platform trailers, there are 1,118 vehicles shown in Table 44 of the type to be empty 50 percent of the time. Therefore, the number of doubles under 30,000 pounds in Table 21 should be at least 564. If platform trailers are included as being likely to run empty frequently, the number of empty doubles in Table 21 should be even higher.

C. The twin trailer data in Tables 21 and 44 of Volume IV are obviously not representative. Loadometer surveys on interstate rural highways show twin trailers loaded in a range of 82 to 100 percent. The surveys were in Illinois (1979), Kansas (1979), Oregon (1977), and Washington (1979).

3. Sources of size data

A. Vehicle configuration was determined by photographic observation or manual monitoring. Both were done on a sampling basis one week per quarter.

B. Size data was definite when obtained at truck stops and rest areas and when field investigators actually measured vehicles. Definite size data could be obtained for only 27 of the 78 sites. (Vol. IV, Page 8).

4. Quality of data

A. It is doubtful if the size data is representative. There was no way of determining that a representative number of each type of truck stopped at truck stops or rest areas (Vol. IV, Page 10).

B. The length of trailers was unknown for 69 percent to 88 percent (Vol. IV., Page 40-42).

C. The length data for the overall vehicle is missing for 25 percent of the vehicles, according to Table 28 of Volume IV. However, this Table may be based to a large extent on approximations made at scales, toll booths and at other locations. If so, the amount of questionable and missing data is higher than 25 percent.

5. General problems with size and weight data

A. Of 32,103 vehicles sampled in this study for size and weight data, 25,008 are California vehicles operating through the specially selected study sites (Vol. IV, Page 13).

B. The California data is biased toward urban operations, more so than other states.

California data is 46 percent urban. For other states 33.7 percent of the data is urban. This means that California trucks had a higher potential for accidents and therefore precludes comparison of California data with data of other states (Vol. IV, Page 15).

V. PROBLEMS WITH ACCIDENT DATA

Conclusion: There is a significant amount of accident data missing. Examination of overall rates for vehicles for which data was obtained shows widely fluctuating rates, indicating that the missing data affects the study.

1. The gross weight of the truck involved in an accident was known for only 47 of every 100 trucks (993 of the 2,112 trucks in accidents) (Vol. III, Page E-7). As noted earlier, definite weight data in the measurement of vehicle exposure was known for only 35 percent of the vehicles. This means that the contractor developed accident rates relative to weights on the basis of far less than 50 percent of the accident and exposure data, and that the rates are much less reliable than would be expected if the data were complete.

2. Total length of the truck was not known in 48 percent (1,016 of 2,112) of the accident involvements (Vol. III, Page E-7). Cab type was not known for 43 percent of the combination vehicles and bobtail vehicles (Vol. III, Page E-8). Twin Trailer configuration was not known in 19 percent of the accidents involving that type of vehicle. Omissions in this type of accident data, coupled with similarly large omissions in exposure data result in unreliable accident rates and may explain why some of the rates in the contractor's Tables are based on so few accidents.

3. The accident data is hardly representative of all of the study sites as 38 percent came from only 7 sites (Vol. III, Sites 114, 145, 241, 311, 343, 344, and 513).

4. Accuracy of the accident data is questionable because of missing data and because the contractor did not return accident reports to field investigators for correction if only part of the data was wrong. According to the contractor, accident reports were returned for further work only if the reports were totally wrong (Vol. III, Page 23). Errors and omissions in the accident data that was accepted may have seriously affected the accuracy of accident rates developed from such data.

5. Calculation of an overall rate for doubles from the various Tables shows wildly fluctuating results. Thus the average rate for doubles with known weight is 159 per 100 million miles (Vol. III, Table 9); for doubles with known cargo configuration, 255 per 100 million miles (Vol. III, Table 21), and for known driver age, 328 per 100 million miles (Vol. III, Table 22). The changes in result depending upon what data is known indicates that the data is unreliable.

6. The criteria for reporting accidents varies substantially from state to state. The California Highway Patrol for instance concentrates on injury and fatality accidents only (Vol. III, Pages 16, 75). Since a police report was crucial to trigger study of the accident these variations are significant. Data from different states is frequently and improperly aggregated in the study. The study recognizes the problem (P. 75) but does not treat it in most instances.

VI. PROBLEMS WITH ACCIDENT RATES AND TABLES

Conclusion: The accident rates in the Tables are flawed because large parts of the data are missing; the rates are frequently based on small numbers of accidents and exposure data and are therefore not reliable; the contractor did not control the exposure data to the extent necessary to assure that all vehicle types which were compared on the basis of size, weight and configuration had the same degree of exposure to accident causation factors.

1. The contractor erroneously assumes that any errors or omissions of the data will apply equally to all types of truck operations, so such errors will neutralize each other. Specifically, the contractor asserts that "within the analyses, the relative rates between variables (e.g. truck types) are real; the same biases apply to all the data." (Vol. III, Page 26). The contractor seems to assume that all trucks have identical amounts of exposure by time, mileage and location. Obviously, this is not true. Some trucks travel more at night. Some trucks may be exposed more to rush-hour traffic than others. Some trucks may travel higher mileages at the beginning of a week than at the end. Some trucks may have large variations in exposure from one season to the next. Errors in the exposure and accident data, dealt with herein are not applicable equally to each truck type. The same biases do not apply to all the data.

2. The rates in the study do not agree with that in four other studies of twin-trailer operations:

Safety Comparison of Doubles vs. Tractor-Semitrailer Operation

This comparison by the Bureau of Motor Carrier Safety of the Federal Highway Administration is dated November, 1977 and shows "doubles" with a better accident rate than tractor-semitrailers for the latest year (1976), and with lower or comparable rates for seven preceding years.

Accident Experience of Double Bottom Trucks in California

This study is by the California Highway Patrol and was released in April, 1973. It shows the same rate of fatal and injury accidents for "doubles" as for tractor semitrailers.

Matched Run Analysis

Released on April 30, 1979, as information for a legal suit by Consolidated Freightways, Inc., against the State of Iowa, this analysis compares the accident record of "doubles" and tractor semitrailers operating under identical conditions of roads, traffic, weather and other operating conditions. The Matched Runs covered 188,296 trips for each type of vehicle, and 56,100,018 miles of travel for each vehicle type. The accident rates for the two types of vehicles are comparable. . . 1.89 per million vehicle miles for "doubles" and 1.78 per million vehicle miles for tractor

semitrailers. Consolidated Freightways won its suit and the accident data it submitted were given in-depth consideration by the Court. The Court's decision was upheld by the U.S. Supreme Court.

Comparison of California Accident Rates for Single and Double Tractor-Trailer Combination Trucks.

This study by BioTechnology, dated March, 1978, found no significant difference between the number of "doubles" and "singles" accidents per million vehicle miles of travel. The study found "doubles" accidents resulted in a significantly higher number of people killed per million vehicle miles of travel, but analysis of the study indicates that consideration was not given to the rural characteristics of "doubles" operations which resulted in their greater exposure to accidents of high severity.

3. The contractor errs in comparing the accident rate for one class of trucks with the accident rate of another class without assuring that the two types are exposed to comparable operating conditions of mileage, time, weather, terrain, congestion, and other accident producing factors. It is essential to control the exposure levels even on the same highway or one vehicle type will have different operating conditions than the other and the accident rate will be unduly influenced by factors other than the truck and its characteristics. The need for such controls, even on the same highway is evidenced by the fluctuation in accidents that can occur within a site over short periods of time. For example: For Site 145 (Vol. III, Page B-23) the overall truck accident rate is 423 per 100 million vehicle miles (based on 6 quarters, 9235 ADT, 4.85 miles length of site, and 104 accidents). The rate increased more than 100 percent to 882 accidents per 100 million vehicle miles in the January-March quarter. Apparently there were factors during the quarter which resulted in the higher rate. If any vehicle type had traveled that site more often during that period than another vehicle type, it would be unfair to compare the two types because of the difference in their accident exposure. If, however, the differences in travel of the site were known and compensated for in computation of rates, the comparison would be valid. There is no indication in this study that the contractor exercised control of the data to the extent necessary before making comparisons of the accident experience of two different vehicle types on the same or different sites.

As a second example, the accident rate for Site 143 (Vol. III, Page B-21) was 326 accidents per 100 million vehicle miles (based on 34 accidents, 549 days of exposure, 4744 ADT and 4 miles length of site). For the two July-September periods the rate skyrocketed to 659 accidents per 100 million vehicle miles. Again, for purposes of comparing accident rates of two different vehicle types on this site, it would be necessary to assure that each type was exposed to the same hazards at the same time and over the same number of miles. If, for example, one vehicle type has high mileage in the high accident period, and another has low exposure during such period, a comparison is not valid unless the exposure of each type is known and compensated for in the development of overall accident rates for each type at that site.

4. Comparison by the contractor of different vehicle types for operations at different operating sites is not valid. Table 6 of the study is not valid for that reason (Vol. III, Page 36). Twin trailers are at an unfair advantage in the Table 6 comparisons because a higher percentage of their data is California based than other vehicles. California trucks have a higher exposure to other vehicles than trucks in other states; California sites are more extreme in their nature than the sites for other states; California truck accident rates are the highest of any state in the study, except for Maryland which has a very small base of accidents and mileage.

5. The Table 8 comparisons of Singles and Doubles accident rates (Vol. III, Page 37) is based on combined California-Nevada data by roadway type. It autonatically favors singles because a higher percentage (87 percent) of Doubles mileage was accumulated in California. The accident rate for each roadway type is lower for trucks in Nevada than in California. Singles have a better exposure to such roadways and the more favorable safety environment.

6. A number of the Tables, such as Tables 6 and 8, show rates but do not show the numbers on which the rates are based. If the numbers of accidents used to develop the rates is low, the validity of the rates could be questionable. In Table 8 rates, the number of Nevada accidents is only 12 for Twins and 29 for Singles and so the Table is hardly representative of Nevada experience.

7. Table 9 is an example of a Table which is based on limited amounts of data (Vol. III, Page 38). The data for straight trucks is only 43 percent complete (142 accidents used in the Table compared to 328 straight truck accidents in the study). The data for Singles is only 46 percent complete (617 accidents of th 1329 total). Data for Doubles is 50 percent complete (127 accidents of the 256 total). The small amounts of data in this Table are a reflection of the lack of accident data available on size and weights of vehicles.

8. Table 9 is also questionable as to validity of data because the extreme differences in accident experiences of vehicles that differ only slightly in weight appears to be a result of the use of such small numbers. For example, the rate for Doubles in the 20 to 30,000 pound range is nearly 300 percent of the rate for the next higher weight group, yet there is only 10,000 pounds difference in their weight. This weight difference is not sufficient to result in more accidents, nor does accident data from other sources support the findings of Table 9.

9. Table 9 accident rates may be skewed badly by faults in the development of exposure data which included: failure to obtain complete data by time of day and for a full week; failure to obtain data on traffic in both directions; failure to count empty vehicles at weight stations; limitations on use of photographic equipment at night.

10. Table 10 reflects weight data collected at one weight station in Nevada, at most, and at 10 weight stations in California, at most (Vol. III, Page 39). The accident data is also primarily California based, as is the mileage data. The Table tends to favor Singles because of the greater extent to which Singles have a higher percentage of their operations in Nevada which has study sites with less severe characteristics of traffic and terrain than California. The comparison in Table 10 is not valid unless the Contractor has carefully controlled the data to assure that each of the two vehicle types has comparable exposure to the same conditions. It does not appear that such control has been exercised.

11. Tables 11, 12 and 14 share the same fault of having different vehicle types compared on the basis of rates developed under different operating conditions. There is no evidence that the contractor managed to control the conditions for the vehicle types to assure that they had comparable exposure to accidents. In addition, Tables 11 and 12 have the problem of not having numbers to show the data base for the rates in the Table. Table 14 has numerical data and two problems are obvious: over 60 percent of the accident data for Singles and Doubles is missing; some of the percentages are based on such low numbers that their significance is doubtful. For example, the distribution of accidents by severity for Doubles in the 50–60,000 lb. group, is based on only six accidents.

12. Table 12 appears to mix accident data and exposure data from both urban and rural sites. This results in a bias against those states and vehicle types which have a higher level of urban operations because such operations have greater exposure to accidents. In this study the bias would seem to be against California because it has 46 percent of its sites as urban compard to 33 percent urban for other states. The bias would also be against Twin Trailers, because they seem to have a higher percentage of their operations in California than any other vehicle type.

13. Table 21 is based on only 63 percent of the accident data. The data is probably faulty judging from the variation in accident rates for the different vehicle types of similar configurations. For example, it would seem that all tank vehicles would share similar characteristics such as center of gravity even though they are of different vehicle types. It would seem, further, that accident experience would be somewhat comparable in the degree of accident problems, at least. There is no indication that such is the case. Tanks have the worst rate for Doubles but not for Straight Trucks and Singles. Dumps have the worst rate for Straight Trucks and Singles but not for Doubles. The rate for Bulk Commodity is good for Singles and Doubles but not for Straight Trucks. The problem with Table 21 may also lie in the number of accidents on which rates are based. The accident experience of an entire class of vehicles by type and configuration can hardly be expected to show up accurately for such small numbers of accidents.

The CHAIRMAN. Thank you, Mr. Kiley, very much.

Next we will have Mr. Curtis from Georgia-Pacific, accompanied by Mearl Royse and John Archer.

Your entire statement will be in the record. Why don't you go ahead.

STATEMENTS OF JAMES T. CURTIS, JR., CORPORATE DIRECTOR OF TRANSPORTATION SERVICES, GEORGIA-PACIFIC CORP., ACCOMPANIED BY MEARL ROYSE, MANAGER, TRUCKING OPERATIONS; AND JOHN ARCHER, DIRECTOR OF LOGISTICS, CROWN ZELLERBACH CORP.

Mr. CURTIS. If I could briefly summarize some of the information in this statement, let me say that Georgia-Pacific supports this

particular bill because we have long supported more rational and cost-effective length and width standards for motor vehicles. We believe that the bill moves closer to this goal, and at the same time, provides the highway safety, supports the environmental and energy goals of fuel efficiency, and also protects and does not detract from the longevity of the highway system.

May we focus for a moment on a couple of provisions of the bill. First the 102-inch provision. A van of 102 inches would enable the forest products industry, for the first time, side-by-side loading of 4 by 8 building material panels or 4 by 8 parcels of lumber. The wider equipment would also enable the trucking industry to become more efficient, because it would remove some of the obstacles which presently prevent the trucking industry from handling forest products in closed equipment.

The flexibility should provide better loaded-mile ratio for trucks, and an improved revenue situation. These more realistic minimum widths of 102 inches would also enable the motor and the rail carriers to fully explore the potential of TOFC or piggyback service for what has been traditionally truck movements. It will insure competitive transportation services in areas not served by rail, or areas slated for rail abandonment. And of course, there are many commodities other than forest products that would benefit from that situation and from this particular piece of legislation.

I am cognizant of some earlier testimony this morning by the railroad industry in which there is opposition to this particular piece of legislation. Let me say that with the deregulation bills, both in the motor and rail industry last year, that this piece of legislation, to us, is a logical follow-on to improvements in the transportation system and we would like to see the Congress focus on legislation to enhance the transportation system for the users or the demand side, as opposed to legislation in favor of specific supply-side situations.

If we might, for a moment, turn to the length provision and the double provision of this bill, the proposed lengths would eliminate barriers to efficient interstate transportation. The policies of a few States have hindered truck transportation well beyond the confines of their border. We have appended to our statement what might be called a horror story, which involves the movements of products in this case from Bellingham, Wash., to Atlanta, Ga. The shortest practical route involves 11 States. All but two of those States have different size and length standards. We feel that this situation is an impediment to the free flow of commerce.

The increased truck length and the use of twin trailers in motor transportation will not be detrimental to highway safety. We have, in the Pacific Northwest, utilized doubles for many years and our safety records do not show that doubles present a greater safety problem than any other type of unit. We would be happy to make those records available for you. Since the uniform limits set out in S. 1402 are below the specific limits of many individual States, we would prefer to see the bill amended to provide that the States may exceed these standards.

We appreciate the opportunity to present our views on this issue, and we believe strongly that the U.S. industry can no longer afford the luxury of commercial barriers that waste energy, capital, and

labor and cause unnecessary costs which are passed on to the consuming public.

That is a summary of my statement.

The CHAIRMAN. I appreciate your strong testimony on the 102 inches. I was disappointed that the House did not accept on the natural gas pipeline bill. I will offer on something else and we will get it over to them again, and sooner or later we will get it passed.

Mr. CURTIS. I think this particular legislation here is a further on to that, and would even enhance the situation, and we would like to see that.

The CHAIRMAN. Jack?

Senator SCHMITT. Gentlemen, do you have any guidance to the committee at all on the question of the deterioration of the highway system and highway safety at this time?

Mr. CURTIS. We do not feel that there is anything in this bill that would bring about a greater deterioration of the highway system. We are not going to get any heavier units on the highway than are now permitted.

Senator SCHMITT. Wait a minute. We are going to get more weight on the highways with this bill; right?

Mr. CURTIS. We're going to get more weight, but we're not going to get more weight than is legally allowed already.

Senator SCHMITT. I understand that. But what is legally allowed already is one of the contributing factors to the deterioration of the highways; right?

Mr. CURTIS. Then I would——

Senator SCHMITT. I am not worried about the legal limit so much as I am about the absolute amount of weight that is traveling the highway. A potential chuckhole is chucked.

Mr. CURTIS. If the highway standards are below legal design limits then there is a problem in design and construction. I am not here to offer testimony to tell you how to design highways, Senator. I don't have an answer for that.

Senator SCHMITT. It is the trucking industry's livelihood, the roads. And if the roads get to the point where you cannot use them, and we're getting close to that in some of our New Mexico interstates, what are you going to do?

Mr. CURTIS. I don't think——

Senator SCHMITT. Are you going to shrug your shoulders and say it's not our problem?

Mr. CURTIS. No, and I would like to have Mr. Royse on my right, who is the manager of trucking operations of our company, maybe make a couple of comments on that subject.

Senator CANNON. Would the senator yield for a question to the Senator, perhaps, or the people out here? Actually, aren't you going to cut down on the total wear on the highways if you increase the bulk? In other words, it will take less truckloads to haul the same amount of traffic.

Senator SCHMITT. My only concern is that we are getting representation that we are going to go more to the double trailer concept. I do not know that. They are also indicating that some truckers are going to stick with the single trailer concept, that is the difference in axle load.

In addition, if you become more competitive because of the larger cargo space, presumably you will carry more cargo.

Mr. CURTIS. You may also have fewer units on the highway.

Senator SCHMITT. You might, but do we know?

Mr. ARCHER. I am here today for Crown Zellerbach Corp., and my testimony will focus on what we call low-weight products. These are tissue products, household good items like toilet paper, facial napkins and things of that type, as well as corrugated boxes which we ship in the State of California and the Sun Belt to agricultural people and industrial users. We ship around 60,000 truckloads a year of these products.

We estimate, in looking at this, that we will ship about 6,000 fewer truckloads a year, if the 102 inch cube is approved. What I would like to do is show you what this would produce. No. 1, we feel we will save 200,000 gallons of fuel in doing this. No. 2, we will run 1 million fewer truck-miles. And No. 3, we will not be looking for boxcars when they don't come during the next boxcar shortage in the Northwest.

We use all modes of transportation, Senator. We use piggyback, we use truck, and we use boxcars—I have an exhibit that is attached to my testimony and to be sure we have the right one, Mr. Sol Mosher put in an amended exhibit. I would like to refer to exhibit A attached to my statement. To know that you have the right one, on the bottom of exhibit A we have a number, and it should read 24 pallets in a 45-foot van. If it reads 22, that is the old exhibit, the incorrect one.

The width of the truck is 96 inches. That is not fully usable inside space. That is the outside dimensions. You have to take off around 4 inches for the walls and the braces in the walls, to give you loadable space. We are in the grocery products business. We ship consumer towels and tissue products, and most of this industry uses pallets, skids, pulpaks, things of this type. There are standards in the United States about these pallet sizes. They are generally 40 by 48 inches or they can be 48 by 48 inches.

Now, the key is that the present width of 96 inches, less about 4 inches, 92 inches, does not permit you to load two pallets side by side. Let me show this in exhibit A on the lefthand side. I have shown a typical floor load pattern for a 48- by 40-inch pallet. You load the 48 inches in one direction and then you have to turn the other pallet around on its side to be able to get across the width of the truck, which would then be 88 inches.

Now, when you do that, it causes two problems. No. 1, you get only 24 pallet loads in a 45 van; whereas, if you increase that width to 102 inches, less 4 inches, you would be able to put two 40- by 48-inch pallets side by side and end up with 26 pallets in a truck. The additional cube is about 8 percent.

In addition to that, when you have to turn that pallet around in the current configuration, you need a four-way entry pallet. This means all four sides must be open. If you go to the new configuration at 102 inches, you can use a two-way pallet with a two entry, which is much more stable. It has much more strength to hold the pallet up and you get a much better delivery. That is important to us delivering the consumer product item.

The next one is another example——

Senator SCHMITT. My time is up. I will yield to the discretion of the chairman.

The CHAIRMAN. I want to understand one question. I understand you can get more than one in the 102-inch truck. Jack's point was, I am convinced, that even if your weight limit is 50,000 and your truckload of Kleenex is 20,000 pounds, 102 inches it is 24,000, he is still saying there is 4,000 more pounds on the road. Are you saying that you would actually be using fewer trucks, if you subtract the truck weight, the 8-percent increase in your tissue weight will actually be less? Total gross weight because of fewer trucks?

Mr. ARCHER. Yes. You will have 6,000 fewer trucks going down the highway.

Senator SCHMITT. There is no market growth in these areas? It remains stagnant?

Mr. ARCHER. I assume there will be market growth so long as there are people. But taking a fixed market, if you could put 2 more pallets on a truck and ship 6,000 less trucks, the trucks weigh something, you would take 6,000 trucks off the highway. Our average truckload weight is 18,000 pounds. So if we go up to 21,000 or 22,000 pounds, sure, you ship another 3,000 pounds per trailer but you are shipping 6,000 fewer trailers. That is only one company. Fewer trucks on the highways will also help safety.

The CHAIRMAN. The growth argument, isn't it true, Jack, the growth argument is almost moot. If they grow, they grow, and if they grow they are going to use more trucks, unless the size gets bigger.

Senator SCHMITT. I think that part of it is a valid point, but I do have some concern—to focus on the Interstates and what the Interstates have in terms of standards. I know in my State, and I suspect all of our States have a lot of roads besides Interstates on which these larger trucks will be trying to travel either in cities or between the smaller towns on State highways.

Mr. ARCHER. We ship heavily to your State, Senator, and we would like to continue doing that and to grow there as well.

Senator SCHMITT. We would like to help you but we have a problem with our roads. We cannot get our State government to invest in the highways, much less the Federal Government.

The CHAIRMAN. Jack, you go ahead. I have no questions.

Senator SCHMITT. No, thank you, sir.

The CHAIRMAN. Howard?

Senator CANNON. Thank you, Mr. Chairman.

The CHAIRMAN. Gentlemen, thank you very much.

[The statements follow:]

STATEMENT OF JAMES T. CURTIS, JR., DIRECTOR, CORPORATE TRANSPORTATION SERVICES, GEORGIA-PACIFIC CORP.

My name is James T. Curtis, Jr. I am the Director of Corporate Transportation Services for Georgia-Paciafic Corporation with headquarters in Portland, OR. I have held this position since 1978. Prior to this time I was Director, Materials Transportation Bureau of The Department of Transportation in Washington, D.C. Accompanying me today is Mr. Royse, Operations Manager of Georgia-Pacific's private truck operation.

Georgia-Pacific has 219 manufacturing plants and maintains 165 wholesale Distribution Centers. Each facility utilizes all legal modes of truck transportation. Additionally, Georgia-Pacific operates 2,010 tractors and 2,183 trailers throughout the country. We appreciate the opportunity to appear today in support of Senate Bill 1402. We have long supported more rational and cost effective length and width

standards for motor vehicles. We believe Senate Bill 1402 moves us closer to this goal and at the same time provides for highway safety, supports the environmental goals of fuel efficiency and protects the longevity of the highway system.

Our testimony today will focus upon the major aspects of the Bill, drawing upon our own experiences wherever possible.

extending the minimum overall width of commercial motor vehicles to 102 inches

The new limit would encourage a gradual replacement of the present equipment with van trailers capable of transporting forest products, building materials and other products on a cost effective basis. A van width of 102 inches would enable for the first time, side-by-side loading of 4 by 8 foot building panels or 4 by 8 foot parcels of lumber. We wish to stress that the proposed minimum width provision of this Bill will not continue to enjoy a useful life. Most trailers are amortized over a period of 10 years, and it is anticipated that some fully depreciated vans will be replaced by the larger 102 width vans. The wider equipment will enable the trucking industry to become more efficient because it will remove the obstacle which presently prevents the handling of forest products in closed equipment. This improved flexibillity will lower the transportation cost by allowing motor carriers to improve their loaded mile ratios.

Georgia-Pacific does not anticipate any negative impact upon highway safety caused by expanding the width an additional six inches. This view is not based on actual use of 102 inch wide trailers, but is the result of our many years experience as a significant private motor carrier. G–P frequently hauls "permit" loads exceeding the 96 inch limit. In most states 120 inch wide loads may be transported by purchase of a special permit. Loads up to this width do not require the use of a pilot car.

The more realistic minimum width of 102 inches will also enable motor and rail carriers to explore the potential of TOFC (piggyback) service for what has traditionally been "truck" movements. It will ensure competitive transportation service in areas not served by rail or areas slated for rail abandonment. There are many commodities other than forest products that would greatly benefit from the wider trailer. The truck dependent community will be able to explore new loading options to improve truckload earnings and result in transportation savings for the consmer. Georgia-Pacific strongly supports the uniform width provision of 102 inches.

extending the minimum overall length for truck tractor-semitrailer combination to 60 feet (65 feet for truck tractor-multiple semitrailer combinations)

The proposed length limits will eliminate barriers to efficient interstate transportation. The policies of a few states have hindered truck transportation well beyond the confines of their own borders. Exhibit I to this statement outlines the impact which unrealistic length restrictions have upon efficient truck transportation. In this example a load of paper towels is transported from Bellingham, WA to Atlanta, GA. The shortest practical route involves 11 states. All but 2 states, Kentucky and Illinois, have differing size and length standards. The proposed length limit would allow the use of twin 27 foot trailers with a combined cubic capacity of 3,730 feet. This exceeds the current maximum length limits in Tennessee and Georgia. If equipment were loaded in Bellingham, WA to meet the lowest common denominator, Tennessee, only 2,764 cubic feet of product would be transported from the production facility. In other words, truck efficiency on this transcontinental move is currently reduced by 26 percent because a few states have not adopted the standards proposed in S. 1402. This has caused many truck operations to deploy additional vehicles at "reload" facilities in strategic states. This practice causes the needless expense of additional terminals, equipment, fuel and labor.

Georgia-Pacific, and most trucking companies including owner operators prefer to transport certain commodities in twin trailers. This is due to the larger capacities of twins and the versatility of detaching the trailers for separate deliveries. This speeds delivery, improves equipment utilization, and reduces fuel and labor costs, thereby reducing the transportation cost passed on to the consumer.

The increased truck length and use of twin trailers in motor transportation will not be detrimental to highway safety. Georgia-Pacific has safely utilized "doubles" for many years in the Northwest and our safety records can be made available. These records show that "doubles" are as safe to operate as any other vehicle configuration presently in use. The facts are also supported by the findings of various industry associations, judicial and regulatory agencies. In *Raymond Kassel et. al. Appellant* v. *Consolidated Freightways Corp. of Delaware,* the Court found, after 14 days of extensive evidence, that the use of twin trailers was a safe practice;

"* * * evidence clearly establishes that the twin is a safe as the semi. * * * twins and semis have different characteristics. Twins are more maneuverable, are less sensitive to wind, and create less splash and spray." 475F Supp. 544, 549 (SD Iowa 1979)

The Iowa case was upheld by U.S. Court of Appeals and again by the Supreme Court. The Courts have corroborated Georgia-Pacific's own findings.

Since the uniform limits set out in S 1402 are below the specific limits of many individual states, Georgia-Pacific urges that this bill be amended to provide that the states may exceed these standards.

Georgia-Pacific appreciates the opportunity to present its views on this important issue. We believe strongly that U.S. industry can no longer afford the luxury of commercial barriers that waste energy, capital, and labor, and cause unnecessary costs which are passed on to the consuming public.

EXHIBIT I

IMPACT ILLUSTRATION OF NONUNIFORM LENGTH STANDARDS—SHIPMENT OF SANITARY PAPER PRODUCTS FROM BELLINGHAM, WASH., TO ATLANTA, GA.

1. In Bellingham we would utilize a 2-axle tractor pulling twin 32' trailers—cubic feet 4,422.
2. Entering Oregon we would change to a 2-axle tractor pulling three 30' trailers—cubic feet 6,219.
3. Entering Idaho we would utilize the same configuration as in Oregon, however, these units are to be operated on designated highways only.
4. Entering Wyoming we would change to a 2-axle tractor pulling twin 35' trailers—cubic feet 4,836.
5. Entering Colorado we would utilize a 2-axle tractor but reduce twin trailer lengths to 29' each—cubic feet 4,008.
6. Entering Kansas we could again utilize the 2-axle tractor but would reduce twin trailer lengths to 27' each—cubic feet 3,730.
7. Entering Missouri the equipment could be identical to that in Kansas except you can only operate on designated highways.
8. Entering Illinois the same configuration could be used, but again, on designated highways only.
9. Entering Kentucky—same as Illinois.
10. Entering Tennessee it would be necessary to change to a 3-axle tractor pulling a 40' semi trailer—cubic feet 2,764.
11. Entering Georgia we would go back to a 2-axle tractor with twin trailers but each trailer would only be 24'6" long—cubic feet 3,386.

STATEMENT OF THE AMERICAN PAPER INSTITUTE, INC.

American Paper Institute, Inc. (API) here submits to the Committee its views on S. 1402. These views are also concurred in and supported by the following four major organizations which, together with API, essentially comprise the forest products industry: American Plywood Association, American Pulpwood Association, Southern Forest Products Association and Western Wood Products Association.

The members of API and these four other Associations are all substantial users of truck transportation and have a vital interest in the matters embraced in the legislative proposals here before you.

It is not necessary to stress that the quest for a more rational system of standards for commercial motor vehicle length and width limits has been underway for several years. The understanding is widespread that a system of conflicting state regulations is costly in many respects, such as the imposition of improper burdens on interstate commerce and unwarranted, ill advised waste of energy. We are also mindful of the need to be aware of both safety and highway damage considerations in seeking to resolve these problems.

There are three basic elements to the bill. First, it would provide a uniform limit for commercial motor vehicle widths of 102 inches. The second element provides for a uniform standard for the single tractor-trailer combination. The limit would be 60 feet in overall length, no more than 45 feet of which could be the actual trailer itself. The final element provides that states may no longer bar "doubles" from interstate highways. The overall length, under the bill, for such combinations would be set at 65 feet.

In conjuction with this testimony we are offering the expressions of views of individual member companies. The latter are set forth in Attachments to this Statement, as follows:

1. John J. Archer, Director—Logistics of Crown Zellerbach Corporation;
2. John G. Kauffman, Vice President-Director of Weyerhaeuser Co.

3. Clifford C. McCarty, Director of Distribution and Transportation Department for Continental Forest Industries (a member of the Continental Group); and

4. R. W. Walters, Director of Traffic, Boise Cascade Corp.

These gentlemen are intimately familiar with the problems to be solved. It is felt that their recommendations based upon their experience will be especially helpful to the Committee. Their experience and recommendatons are broadly representative of the forest products industry.

UNIFORM LIMIT FOR COMMERCIAL MOTOR VEHICLE WIDTHS OF 102 INCHES

We strongly endorse the uniform width provisions calling for 102 inches. This will meet the needs not only of the paper industry but the entire forest products industry. For example, this width will make possible the placement of 4 foot by 8 foot piywood panels, side-by-side. Similarly, it will be feasible to place 4 foot by 8 foot parcels of 2 inch by 4 inch studs side-by-side. It will be feasible to place 50 inch rolls of paper side-by-side. It will also be feasible to place two 50 inch pallets side-by-side. These are illustrative rather than exhaustive samples. However, this is of tremendous importance to our industry as we endeavor to serve our customers well.

When vans of the 102 inch width are available they have the added, important advantage that they can be used efficiently in lieu of rail car equipment. In times of rail car shortages—which are all too frequent—this will become of great importance in meeting our transportation needs in the Pacific Northwest and other parts of the country where our producing facilities are located.

The necessity for and the benefits of the 102" width are discussed in practical terms in the attached Statements. (See Archer, pp. 2-4; Kauffman, pp. 2-3; Walters, pp. 1-3).

We are mindful of the amendment as to width included in the Pipeline Safety Authorization Act of 1981, sponsored by Chairman Packwood and passed by the Senate. This language is acceptable. There are, of course, limitations which may feasibly be removed in the House-Senate Conference or by enactment of the Cannon Bill. In this way the splendid progress achieved by this amendme t would be further advanced.

UNIFORM STANDARD FOR THE SINGLE TRACTOR-TRAILER COMBINATION

As to the second element, the limitation of 60 feet in overall length for the single tractor-trailer combination, in our testimony last year on the amendment to S. 1390, the Commercial Motor Vehicle Safety Act of 1980, API took a strong position in favor of a uniform and consistent overall minimum length of 65 feet. It is true that our industry presently has equipment throughout the country which exceeds the 45 foot trailer limitation and we are gratified that these will be covered by the grandfather provisions of the bill. It remains our strong position, however, that there be no 45 foot limitation on trailer length as is now being proposed in S. 1402. At a time when the forest products industry, and other industries, are striving to achieve maximum economies in pricing and distribution, as part of the battle against inflation, the artificial barrier of 45-foot lengths is unacceptable and unsound. This is eloquently borne out in the practical and realistic observations contained in the four Attachments. (See Archer, pp. 4-5; Kauffman, pp. 4-5; McCarty, p. 1; Walters, p. 3)

In our view it is also desirable that the final language of the bill provide that the states may exceed these standards if they so desire.

"DOUBLES"

We support as a step forward the final provision to the effect that states may no longer bar "doubles" from interstate highways.

CONCLUSION

In presenting these views, we are seeking significant improvements in meeting the transportation needs not only of our industry but of the country as a whole. Our views recognize fully and support the conservation of energy which will be advanced under the approach we endorse. This has been emphasized in the Attachments. (See Archer, pp. 4-5; Kauffman, pp. 4-5; McCarth, p. 1; Walters, pp. 2-3). We share the views Senator Cannon expressed in sponsoring S. 1402 that the bill provides significant economic benefits without jeopardizing safety considerations.

ATTACHMENT 1

STATEMENT OF JOHN J. ARCHER, CROWN ZELLERBACH CORP.

My name is John J. Archer. I am the Director—Logistics of Crown Zellerbach Corporation (CZ). Crown Zellerbach is a fully integrated forest products company. The Corporation is engaged in the manufacture and distribution of a broad and diversified product line including pulp, paper, logs, lumber, plywood, containers and flexible packaging.

This testimony is relevant to transportation of our lightweight products such as towels, tissue and corrugated boxes.

S. 1402 to increase the trailer's width to 102″ or to limit the length to 45″ would have a significant impact on our transportation by motor carrier. The primary effect will be on shipments of our "light-weight type" products. We ship over 600,000 tons per year of these products consisting of towel, tissue and corrugated boxes.

1. The wider or longer the van, the more lightweight product we can haul.

In a standard 96″ wide van, we load an average of 24,000 lbs. of towel and tissue products and an average of 18,000 lbs. of corrugated boxes. The weight limit of a typical van exceeds 45,000 lbs. Thus, the amount of lightweight products we can load is restricted by the van's cubic capacity not the weight limit. Therefore, the larger the dimension of the van the more products we can load without concern of exceeding maximum load capacity of the vehicle as established by State or Federal regulations.

For example, a typical 45″ van with 96″ width currently used for shipping lightweight towel and tissue products, and/or corrugated boxes, has a loading capacity of 2,932 cubic feet. A change in the van width to a 102″ outside dimension would increase the loading capacity to 3,150 cubic feet. The result would be an increase in van loading capacity of 7 percent.

2. The additional increase in van width also provides increased loading flexibility. For those loads which ship on pallets, the increase in van width to 102″ will allow us to put more product in the van using more efficient loading patterns. While we use many different loading patterns depending upon the size of the vans, the following examples will illustrate the manner in which the wider van is advantageous.

Example.—We could load 4 more 40″ x 48″ pallets per van of towel and tissue products, an 18 percent increase if a 96″ van were increased to 102″. See Exhibit A.

Example.—We could load 11 more 48″ x 48″ pallets per van of corrugated boxes, a 100 percent increase if a 96″ van were increased to 102″. See Exhibit B.

The major benefits of increasing the van size to 102″ outside as proposed in S. 1402 would be as follows:

1. Increasing the van loading capacity would result in a 5–10 percent increase in the amount of hand stowed product carried per van load.

2. Increase the effectiveness of pallet loading patterns, which result in an 18–100 percent increase in the amount of product carried per van load.

3. Reduce the number of truck miles per year by 1,000,000 which would result in a fuel savings of 200,000 gallons per year.

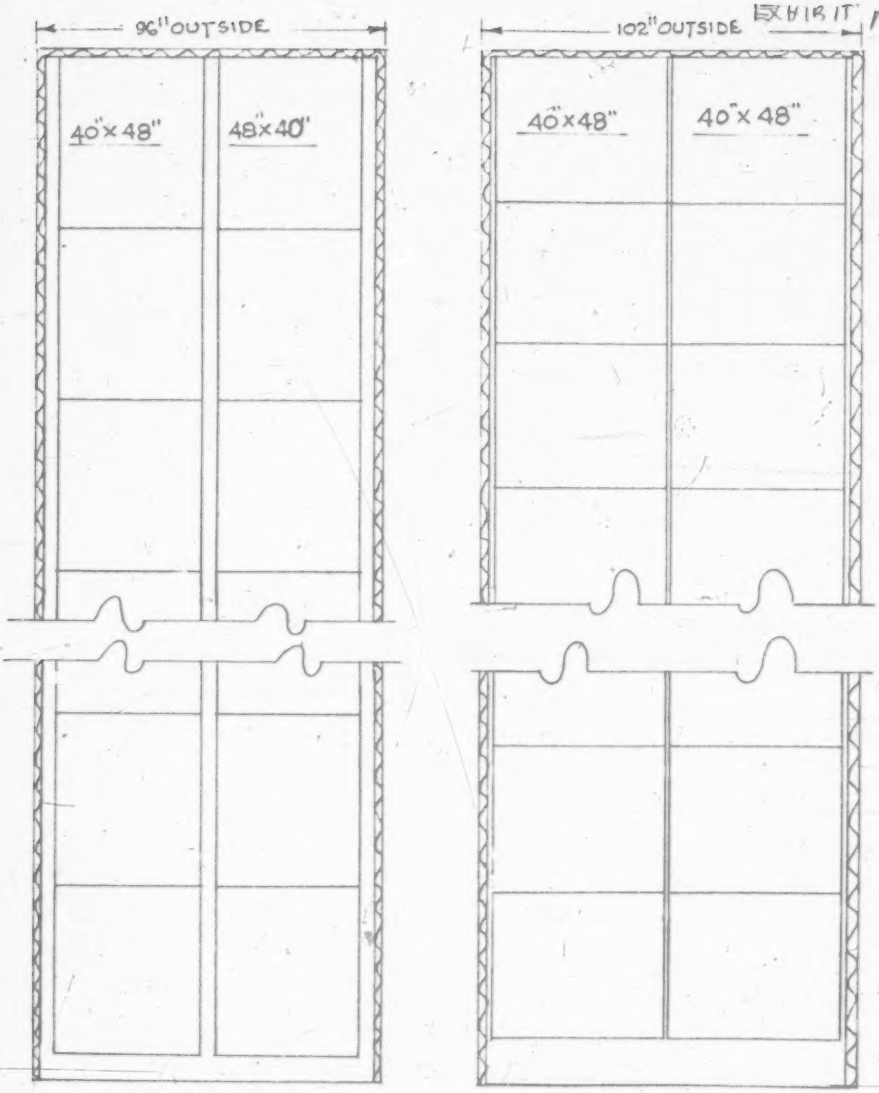
S. 1402 offers on one hand, the opportunity to increase the utilization of our national highway fleet and on the other hand, decreases this opportunity by restricting the length of trailers to 45 feet. We oppose the length restriction for the same reasons that we support the increase in width to 102 inches.

There are today, highway carriers operating with 48 foot and with 50-foot trailers. These trailers have 7 to 11 percent more cubic loading capacity than standard 45-foot trailers. Furthermore, the tractor-trailer combinations comply with the 60-foot overall limitation in effect in most states.

Products which ship on pallets would benefit also. In a 102-inch-wide van, 48 feet in length, we can load 28 40″ x 48″ pallets versus 26 in a standard 45-foot van. With 50 feet of van length we can load 24 48″ x 48″ pallets versus 22 in a 45-foot van.

In summary, passage of S. 1402 authorizing the increase in trailer width to 102 inches, and, deleting the 45-foot limitation will improve the efficiency of our national transportation fleet, and, will help curb inflation. I urge this committee to endorse these recommendations.

EXHIBIT A

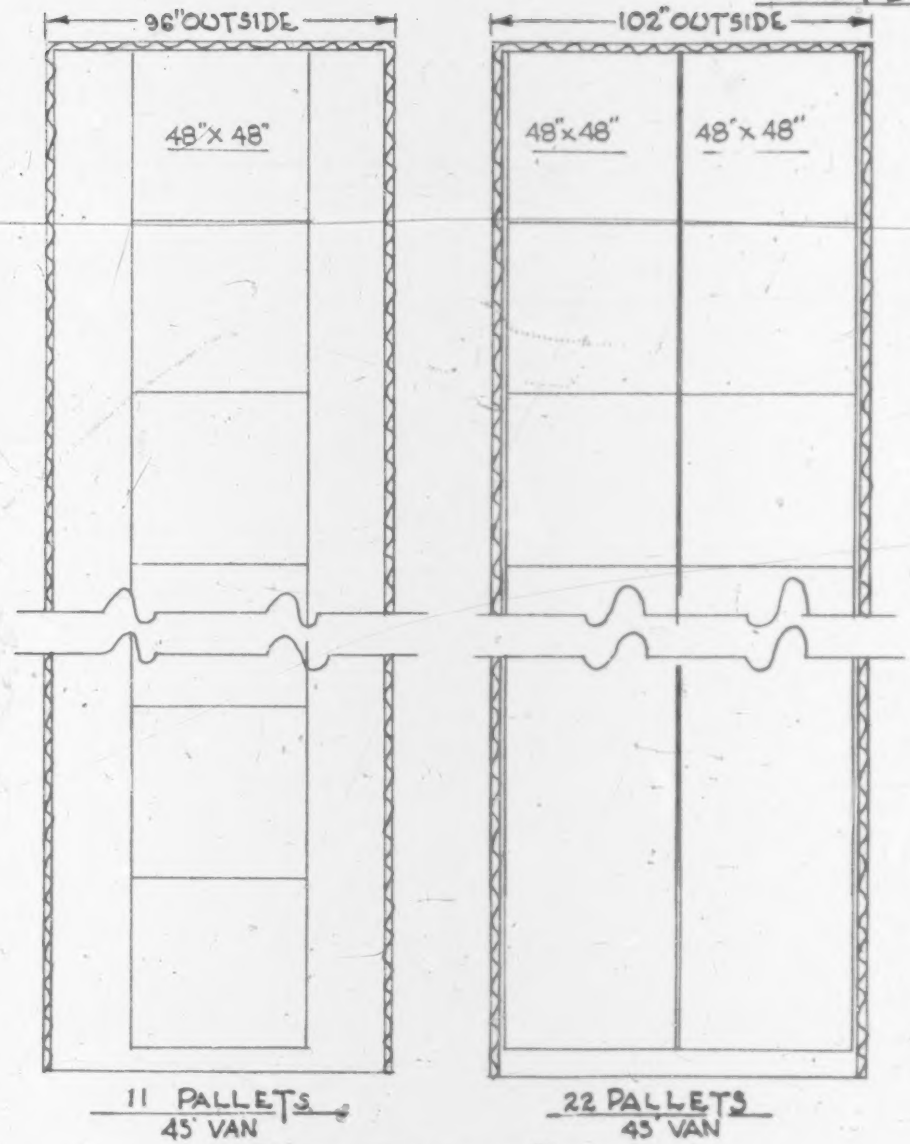


22 PALLETS
45' VAN

26 PALLETS
45' VAN

TOWEL AND TISSUE

EXHIBIT B



11 PALLETS
45' VAN

22 PALLETS
45' VAN

CORRUGATED BOXES

ATTACHMENT 2

STATEMENT OF JOHN G. KAUFFMAN ON BEHALF OF WEYERHAEUSER CO.

My name is John G. Kauffman and I am Vice President-Director of Weyerhaeuser Company with headquarters at Tacoma, Washington, 98477.

Weyerhaeuser Company is a multi-plant diversified forest products firm engaged in the production, manufacture, distribution and marketing of logs, woodchips, lumber, plywood, particleboard, hardboard, paneling, gypsumboard, woodpulp, paper, containerboard, shipping containers, diapers and related articles. In the normal course of business we ship and receive thousands of carloads and truckloads of freight throughout the United States. We make extensive use of common and contract motor carriers. We also operate our own fleet of approximately 1,450 power units and 1,700 trailers.

We therefore have a significant interest in Senate Bill 1402 and appreciate this opportunity to express our views.

At the outset I would like to point out that Weyerhaeuser Company supports Senate Bill 1402 in principle. We wholeheartedly support Section 3 which prohibits States from establishing and enforcing a width limitation of less than 102 inches for commercial motor vehicles operating on an Interstate or designated federal aid highway, provided the traffic lanes are at least 12 feet wide.

Weyerhaeuser also supports those portions of Section 4(a) which would establish minimum lengths of 60 feet for standard tractor-trailer combinations and limits of not less than 65 feet for vehicles operating in any other combination of units. However, it sees no justification for the proviso which would limit the length of any single unit in such combinations to 45 feet.

In support of our position we offer the following:

MINIMUM OVERALL WIDTH OF 102 INCHES

Our analysis discloses that an increase in the overall width of trailers from 96 to 102 inches will result in more economic and efficient transportation which will inure to the benefit of all concerned. Among the advantages of the 102-inch width are:

(a) The number of standard 40x48 inch pallets which can be loaded in a 45′ van will increase by 8.5 percent. (At present one side of the trailer is loaded crosswise and the other side is loaded lengthwise. In the future both sides can be loaded crosswise with the 48″ dimension running across the width of the trailer.)

(b) The new 102-inch width, in van equipment, will be able to accommodate twice as many bundles of 4x8 foot plywood, particleboard, hardboard, paneling, gypsumboard, and other building boards than a 96-inch van. At present van loading of these products is uneconomical. Only one row of bundles can be loaded lengthwise down the center of the van and this can only be accomplished with difficulty. With the introduction of 102-inch trailers the bundles can be more readily and safely loaded crosswise. This will result in significantly better utilization of our van equipment.

(c) Van loading of 4x5 ft. panels will avoid the necessity/expense of tie-downs and tarpaulines required for flatbed equipment presently used. It also reduces the risk of product damage.

(d) Van loading of 4x8 ft. panels also reduces the number of empty miles. The van which delivers merchandise or packaged freight to the Plywood or Particleboard mill is now flexible enough to pick up a load of panels.

(e) Additionally, the cubic capacity of vans will increase by 6.5 percent and the deck capacity of flatbeds by 6.2 percent. For light loading products, such as diapers and corrugated containers, the increase in load size is directly related to the capacity increase. This increase in capacity will, of course, reduce equipment requirements.

(f) The foregoing will result in increased productivity; less fuel usage per ton; lower capital, labor and running costs per ton; reductions in product damage; and reduced transportation costs per ton mile. Savings will benefit shippers and carriers and ultimately the consumer in the form of lower prices. These efficiencies will have a positive impact on retarding the inflationary spiral.

MINIMUM LENGTH OF SINGLE UNITS

As previously indicated, we see no justification for the proviso in Section 4 which would limit the length of any single unit in combinations to 45 feet. Fifty-foot vans have been moving our lightweight corrugated shipping containers in Texas for at least four years without a single accident. Drivers report that these units are just as maneuverable as 45-ft. vans. These 50-ft. vans are drawn by the same kind of cab-over-engine tractor as we use for 45-ft. trailers. They accommodate 9 percent more

product than the 45-ft. units. When you consider that the average shipment in Texas moves 600 miles, it is obvious that the larger units result in substantial reductions in fuel consumption; increases in productivity; lower capital, labor and running costs per ton; and reduced transportation costs per ton mile.

In Oregon, Weyerhaeuser uses a motor carrier who moves some 1,500 loads per month of lightweight woodchips and shavings in 50-ft. vans. By doing so, he has increased his load capacity by 10 percent; reduced fuel consumption and operating costs per ton mile and has thus been able to hold rates at a reasonable level. He reports no driver complaints or safety issues with the use of 50-ft. vans.

In view of the foregoing, we suggest it would be inadvisable to discourage innovation by placing a limit on the size of individual units in a combination. You already propose a length limit on the entire combination, which should provide adequate protection for those who are concerned about this feature.

CONCLUSION

In conclusion, we would like to urge you to pass Senate Bill 1402 with the exception indicated as soon as possible. We believe this bill will improve productivity, reduce energy consumption, and contribute to lower consumer prices at no penalty to the safe operation of trucks on our highways.

ATTACHMENT 3

My name is Clifford C. McCarty. I am Director of Distribution and Transportation Department for Continental Forest Industries (a member of the Continental Group). I have held this position or a comparable position for the past seven years.

Continental Forest Industries (CFI) is a major producer of paper and paper articles whose operating segments includes Woodlands, Mill Operations, Bleached Operations, Corrugated and Fibre Drum Divisions, as well as a bag subsidiary.

CFI supports the reasoning behind the S. 1402, to establish specific minimum standards of 60 feet for truckload lengths and 8 feet 6 inches for trailer widths. Continental Forest Industries is in strong support of greater trailer volume (especially trailer length) and therefore lower fuel costs. We support the overall length of 60 feet but can find no reason for limiting tractor or trailer lengths. For example, 48-foot trailers, if used exclusively in one division could reduce the over the road truckload movements by 2,800 loads per year. This results from an increase of only 3 feet (45 feet to 48 feet) while still remaining within 60 foot overall length limit.

The advantages of greater length will be fewer vehicles on the nations highways, greater longevity of the roads, higher safety level on the roads and less pollution from vehicle emissions.

The greater trailer volume will provide beneficial results on both an economic and ecological basis. As an example, for CFI's Fibre Drum Division from a fuel conservation standpoint, approximately 113,000 gallons of fuel will be conserved with a net increase of product transported per trip of 7.5 percent.

In light of the facts presented, we strongly recommend the committee to review these findings and allow the proposed trailer width of 102 inches and an overall unrestrictive length of 60 feet provisions to become effective, with no limitations on trailer length.

STATEMENT OF R. W. WALTERS, DIRECTOR OF TRAFFIC, BOISE CASCADE CORP.

At the outset we would like to make the general comment that SB 1402 is unique in that with simple and concise language it allows our highway transportation system to accommodate the economic realities of the 1980's. Moreover, by the stroke of a pen hundreds of millions of transportation dollars per year can be saved without one dime of additional taxes. SB 1402 is analogous with the standardization of railroad trackage gauge that occured during the 1870s; the effects of SB 1402 should be no less beneficial.

Some specific comments and recommendations by section are:

Section 2. "Commercial Motor Vehicles" be defined to ensure that private carriers are not in any way excluded.

Section 3. We strongly support the intent and language of Section 3 without modification.

The economies and efficiencies that will flow from this one item are virtually incalculable. the reasons are quite simple and logical. The present 96 inch trailer width constraint does not permit the full cubic capacity loading of dry van trailers with any product that is manufactured in multiples of four foot dimensions. The most classic example is plywood which typically is sold in banded units measuring

three geet high, four feet wide and eight feet long. There is no practical loading configuration that allows units of plywood to be loaded into a dry van trailer that utilizes any more than 50 percent of the weight carrying capacity of the trailer. Consequently, virtually all truck shipments of plywood must be transported on flat bed trailers, as a flat bed trailer permits two-four foot wide units of plywood to be loaded side-by-side the full length of the trailer bed. As is obvious, a fractional portion of the product (less than 1 inch) extends beyond the entire width of the trailer bed.

The example of plywood extends to a broad range of manufactured products that includes but is not limited to such items as paneling, gypsum board, and a whole host of packaged case goods that are shipped on four x four pallets. Each of these products face the same constraint. They cannot be economically shipped in dry van trailers and must be shipped on flat bed trailers.

If there were a balance between the supply and demand of dry van trailers and flat bed trailers, there would be no incremental economics to be gained. Unfortunately, such is not the case. For example, a major railroad terminates approximately 46,000 trailers within the Pacific Northwest annually. These are generally TOFC (piggyback) trailers that move from eastern manufacturing origins to west coast markets. However, only 21,000 or 46 percent of these trailers are returned to their eastern origins under load or stated differently, 25,000 trailers are returned empty. Assuming a reasonable cost of 80 cents per mile on a 1,000 mile return movement, this particular railroad expends, and our transportation system wastes, over $20,000,000 per year (.80 x 1,000 x 25,000).

While this phenomenon is occuring, flat bed trucks are driven empty to the multitude of plywood mills for loading of plywood to eastern markets. Moreover, the availability of flat bed trucks is becoming more critical within the Pacific Northwest.

In this one example, if 102 inch trailers were permitted, they could be loaded with plywood to eastern markets reducing if not eliminating the empty return of 25,000 trailers for this one railroad alone.

Although the research is scant, there does not appear to be any credible evidence to suggest that 102 inch trailers pose any threat to highway safety if they are used on highways with traffic lanes twelve foot or more. Canada has permitted (as has numerous states) 102 inch trailers for years without any highway safety implications.

Section 4. We believe that any restriction to forty-five foot trailers in tractor semi-trailer combinations should be stricken. We would favor substitute language that would place a federal minimum length of sixty-feet overall for trailer semi-trailer combination without reference to trailer size.

Within the overall length of sixty feet, there can be numerous economic, manufacturing and efficiency trade-offs depending on product, the territory being served and the demands of the market place between trailers and tractor size. Limiting trailers to forty-five feet would discourage innovation and research precluding future productivity improvements.

Section 5. We strongly endorse the intent and language of this section as unlike Section 4 it makes no reference to trailer size and provides for a reasonable federal overall length minimum.

In summary, we strongly believe that SB 1402 clearly addresses the artificial barriers that have inflated transportation costs, wasted precious energy resources, denied productivity improvements and generally inhibited an efficient highway transportation system.

Senator SCHMITT. Mr. Chairman, have we had any input from local governments, counties, cities?

The CHAIRMAN. We are going to

Senator SCHMITT. I think it is important to have them indicate the impact of these changes on them.

The CHAIRMAN. Next we have a panel of Mr. Gerald Turner, Myron Yasiejko, Daniel Bolger, and Peter Griskivich.

Mr. Turner, go right ahead.

STATEMENTS OF MYRON YASIEJKO, CHAIRMAN, HIGHWAY FACILITIES COMMISSION, NATIONAL INDUSTRIAL TRAFFIC LEAGUE; DANIEL BOLGER, CORPORATE DIRECTOR, PHYSICAL DISTRIBUTION, ANCHOR HOCKING CORP., ACCOMPANIED BY DONALD G. OREN, PRESIDENT, DART TRANSIT CO., REPRESENTING THE COALITION FOR ENERGY EFFICIENT TRANSPORTATION; PETER GRISKIVICH, VICE PRESIDENT, MOTOR TRUCK MANUFACTURERS DIVISION, MOTOR VEHICLE MANUFACTURERS ASSOCIATION; AND GERALD C. TURNER, MANAGER, TRANSPORTATION REGULATION, OWENS-ILLINOIS, REPRESENTING THE NATIONAL ASSOCIATION OF MANUFACTURERS, ACCOMPANIED BY ROBERT RAGLAND, DIRECTOR, REGULATORY REFORM AND GOVERNMENT ORGANIZATION

Mr. TURNER. I would like to yield to Mr. Griskivich to lead off the panel, please.

The CHAIRMAN. Mr. Griskivich, go right ahead.

Mr. GRISKIVICH. I ask that my written prepared statement be submitted for the record.

The CHAIRMAN. It will be.

Mr. GRISKIVICH. I will highlight it. The Motor Vehicle Manufacturers Association supports the provision of S. 1402 which prohibits States from limiting truck, tractor, semitrailer combinations to less than 60 feet; "doubles" to less than 65 feet; and allowing trucks of 102-inches width on designated highways. These length provisions recognize what the majority States already permit: 42 States allow tractor-semitrailers of 60 feet or more, and 35 States permit doubles of 65 feet or more. The width provision also offers the potential to improve highway safety by improving vehicle stability, but we feel needed safety appendages such as mirrors, turn signals, chains on the tires, should be excluded from any new limit.

There is one provision in S. 1402 which we do not support. I refer to the limit of 45 feet on the length of the semitrailer and 60-foot combinations. The effect of this provision is that 15 feet would automatically be set aside for the tractor. We are not aware of any engineering rationale to justify a 15-foot allowance. The 45-foot trailer limit does not mean that the full 15 feet left over would be used for tractor space. But it does mean that productivity would suffer because certain operators would be prohibited from using trailers longer than 45 feet, which are essential for specialized uses such as in agriculture, pole carriers, logging, utilities, et cetera.

Moreover, since the 45-foot limit would prohibit 47-foot trailers, shippers could not take advantage of the productivity gains afforded by these units.

The flexibility to design and use truck tractors to meet different vocational requirements should not be arbitrarily and prematurely restricted. In this regard MVMA supports revisions to S. 1402 proposed by the National Industrial Traffic League. These will be presented in its testimony.

We are aware that a number of allegations have been raised over the years about the safety of longer truck combinations and in particular cab-over-engine tractors. The ride quality of the COE tractor has been criticized and driver's space is said to be inadequate. And it is claimed that more short COE's—were used to

take advantage of the 80,000 pound gross weight limit enacted in 1974.

I should like to make a few brief observations on each of these allegations, which are treated at greater length in my statement submitted for the record.

First, there is no firm evidence that longer, multiple trailer combinations are less safe than the single trailer unit, nor that a particular cab style engenders unsafe driver conditions or that under comparable operating conditions the "COE" is more dangerous to truck drivers or other motorists than the conventional configuration.

Second, ride quality is a complex matter that cannot be reduced to a simple equation or simple question of tractor length or cab configuration. An over-the-road ride quality demonstration that we sponsored in 1979 shows the driver himself was the ultimate judge of ride quality.

Third, adequate driver space is affected by more than just cab length expressed as bumper-to-back-of-cab dimensions. You have heard about the cooperative SAE study that is underway on truck driver anthropometrics.

Lastly, the use of cab-over-engine tractors has not increased in response to the higher weight limits enacted in 1974, nor are cabs shorter. Industry sales records show the proportion of COE's has actually decreased since 1972, 2 years before the 80,000-pound limit went into effect.

Thus, we believe it would be a mistake for the committee to legislate a restriction on trailer length based on unproven claims. Such a restriction would not solve any of the problems cited in these allegations, but it would most certainly prohibit productivity gains possible from uniform minimum national length and width limitations.

Mr. Chairman, we commend the sponsor of this bill for the significant step forward which this legislation represents. It will enhance, we believe, the trucking industry's ability to move goods more efficiently, conserve fuel, help combat inflation, and benefit the Nation's economy.

Thank you, sir.

[The statement follows:]

STATEMENT OF PETER GRISKIVICH, VICE PRESIDENT AND DIRECTOR, MOTOR TRUCK MANUFACTURERS DIVISION, MOTOR VEHICLE MANUFACTURERS ASSOCIATION OF THE U.S., INC.

Mr. Chairman, members of the Committee, I'm Peter Griskivich, Vice President and Director, Motor Truck Manufacturers Division, of the Motor Vehicle Manufacturers Association of the U.S., Inc. With me today are three technical experts: Wally Whitmer, GMC Truck and Coach Division, who's chairman of MVMA's Vehicle Safety Development Committee—Truck; Farrel Krall, International Harvester, chairman of MVMA's Motor Truck Research Committee; and Jim Culbertson, Ford Truck Operations, and a member of MVMA's Motor Truck Advisory Committee.

We welcome the opportunity to testify on S. 1402, a measure that would establish national uniform minimum standards for the continued regulation by the states of commercial motor vehicle width and length on Interstate highways.

MVMA believes Government transportation policies should encourage the safe and efficient movement of goods at the lowest overall cost. It is in the public interest to increase the efficiency of all modes of transportation to the extent practicable.

The uncertainty of future supply and cost of fuel, the need to conserve fuel for the nation's economic well being, and the increase in transportation productivity that

can accrue from uniform length and width are fundamental considerations in support of this legislation.

Therefore, MVMA supports the provisions of S. 1412 which would prohibit the states to limit tractor-semitrailer combinations to less than 60 feet length; and "doubles" to less than 65 feet length; and allow truck widths of up to 102 inches on designated highways.

The length provisions recognize what the majority of states already permit: 42 states allow tractor-semitrailers of 60 feet or more; and 35 states permit doubles of 65 feet or more. Those states not permitting these dimensions present obstacles to the efficient intra and inter-state transport of goods, wasting fuel and money. Table I summarizes current length and width limits in the states, including provisions on the use and length of doubles.

There is one provision in S. 1402 which we do not support. I refer to Section 4(a) which places a limit of 45 feet on the length of the semitrailer in 60-foot combinations. The intent is that 15 feet would be set aside for the tractor. There is no engineering rationale to justify a 15-foot allowance. Furthermore, the 45-foot trailer limit does not mean that the full fifteen feet left over would automatically be used for tractor space. But it does mean that productivity would suffer because operators could not use trailers longer than 45 feet for hauling low density commodities and for specialized uses in agriculture, logging, utilities, etc., regardless of the kind of truck tractor used. The flexibility to design truck tractors to meet different vocational requirements should not be arbitrarily and prematurely restricted. Nor do we feel the 15-foot allowance, in and of itself, will cause any particular improvement of drivers' accommodation or any other intended result.

MVMA supports revisions to S. 1402 suggested by the National Industrial Traffic League to: eliminate the 45-foot trailer length limit; clarify that vehicles in private carriage are covered; clarify that length and width standards are minimums; provide for access to and from loading docks; and preserve the rights of individuals to bring suit challenging burdensome state regulations.

The productivity gains from using longer trailers are substantial. For example, a 45-foot trailer yields a 10 percent improvement in fuel use efficiency in ton miles per gallon of payload over a 40-foot trailer. A 48-foot trailer provides a 4.8 percent fuel use efficiency improvement over a 45-foot trailer and, two 27-foot trailers, within an overall combination length of 65 feet, are 20 percent more efficient than a single, 45-foot trailer within an overall length limit of 55 feet. These figures suggest that longer overall combination length is economically justified.

Transportation productivity also gains from increased truck width. Current width limits of 96 inches result in trailer interior width ranging from 92 to 94 inches, too narrow to haul standardized 8-foot wide materials. An increase in width from 96 to 102 inches would yield a 6.5 percent increase in cargo capacity and would allow the hauling of modular materials, such as plywood and other building products, of 4'x8' and 4'x4' dimensions (a 102-inch wide trailer provides 8 feet 2 inches or more of interior width). This is especially important to the forest products industry in Western states. An increase in fuel-use efficiency of about 5 percent would also be obtained.

Wheel tread width could be increased both front and rear allowing for improved maneuverability as steering angles are increased. Wider drum brakes could increase brake lining area and brake life. Wider tires could improve tire wear and reduce rolling resistance and increase load carrying capacity. Cab width could be increased to provide more space and reduce air drag through aerodynamic improvements.

The 102-inch width can also yield a safety benefit as new, wider vehicles are introduced. The Highway Safety Research Institute analyzed BMCS accident data and found that the incidence of overturning in single vehicle accidents decreased significantly as "rollover threshold" increased. Rollover threshold, the point at which a vehicle becomes unstable, is a measure of a vehicle's physical resistance to overturning. It is influenced by many factors including load, height, weight and width.

Increasing width from 96 to 102 inches would increase rollover threshold by approximately 7 percent. figure I illustrates the relationship which exists between rollover threshold and the percentage of BMCS reported accidents in which rollover occured. For the case of the fully loaded tractor-semitrailer a 6-inch increase in width has the potential to decrease the incidence of rollovers from 36 to 31 percent. The wider the vehicle, the more stable and rollover resistant it will be. (Eight states and all Canadian Provinces allow trucks of 102-inches or more in width.)

There is one aspect of truck width we should like to bring to the committee's attention. Section 3 of the bill establishes a minimum truck width of 102 inches, but it does not define what the 102 inch dimension encompasses. Certain appendages such as mirrors, turn signals, load securing and other equipment must extend

beyond the nominal width of the vehicle for safe operation. These safety appendages cannot all be defined in specific terms that are commonly accepted. The Federal Highway Administration should be given authority to interpret truck width regulations to exclude safety appendages. Nominal width limitations should apply only to the basic vehicle structure and cargo carrying elements.

A number of allegations have been raised in connection with similar legislation concerning cab and trailer lengths, in support of the alleged need to provide a 15-foot tractor length allowance by restricting trailer length to 45-feet. It is claimed that tractors were made shorter and new truck designs have sacrificed driver cab space for greater cargo capacity when higher gross weight limits were enacted in 1974; that shorter tractor length degrades ride quality; that the cab-over-engine tractor (COE) doesn't provide adequate space for the driver; that the "COE" configuration is less safe than the conventional (engine in front of the cab) tractor, and that "doubles" are unsafe. There are also claims that increased productivity of trucks will divert freight from the railroads. I woud like to comment on each of these points.

TRAILER AND CAB LENGTH

The claim that "COE" truck tractors have been shortened, and therefore cab space reduced, as operators have used longer trailers to take advantage of the 80,000 pound gross weight limit enacted in 1974, is not substantiated by the facts. Trailer length has increased in recent years as shown by production data in Table II. In 1978 more than half of new trailers were 45-feet or longer, compared to 1972 when less than one third were 45-feet or longer. But there has been no corresponding increase in purchases of COEs nor are COEs becoming shorter.

When we examine industry sales of "COEs" and conventional tractors for those trucks having a gross vehicle weight rating of over 33,000 pounds, (Table III) the record shows that in 1972, before the Interstate System gross weights of 80,000 pounds were authorized, the split was 43 percent "COE" and 57 percent conventionals. At no time since 1974 did "COEs" account for more than 43 percent of sales. In 1980 the "COE" share of sales dropped to 38 percent versus 62 percent conventionals. So the argument that the operators rushed to "COEs" after the higher weight limits of 1974 simply doesn't hold up. The truth of the matter is that the variety of cab configurations, including "COEs" and conventionals have long been required by truck operators going back to the 1950s to meet a wide range of vocational uses—city deliveries for example—and have nothing to do with increased gross weights. We conclude from this that truck operators picked cab style based on their vocational uses and types of cargo hauled, e.g., fuels, sand and gravel, steel, lumber, agricultural and construction products or general freight, etc. Vocational needs dictate the kind of truck tractor that is purchased.

Certain "COE" models today are actually longer than some conventional models, both in terms of wheelbase and length from the bumper to the back of the cab (BBC), and new "COE" cabs are longer and more spacious than the models they replaced. Table IV shows the the minimum "BBC" dimension for a representative selection of new truck tractor "COE" models introduced in recent years in comparison to the model replaced. Note that in most cases the BBC dimenson has increased several inches, and in no case has there been a decrease.

Increases in state length limits for combinations have over recent years enabled truck manufacturers to build longer "BBC" cabs and permitted operators to use longer more productive trailers to meet their specialized vocational uses. Since 1974 33 states have increased overall length limits for tractor semitrailers and only 8 states still restrict overall length to less than 60 feet.

Thus, the historical data and current trends in state length limits and truck manufacturing do not bear out the charge that cab length is being sacrificed for more cargo space.

Increasing length in the eight remaining states to 60-foot minimums would provide for both increased trailer lengths and additional cab length. Eliminating the remaining barriers would allow carriers operating interstate to purchase new equipment to take full economic advantage of the longer limit. A counter-productive 45-foot trailer length limit is unnecessary.

DRIVER SPACE

Now let's turn to the contention that "COEs" don't provide adequate space for the driver. The "BBC" dimension is only one factor affecting driver space. Steering wheel angle, seating height, width and angle, the height required for driver visibility, whether or not a sleeper berth is included, accessibility of controls, the distance from which the instrument panel can be read, and many other factors must be

considered when assessing interior cab space. The real question is, "what driver cab space is needed?"

The issue of driver space is under consideration by the Joint Teamster/Carrier Equipment Committee established by the 1979 National Master Freight Agreement. The Committee is charged with a review of the safety aspects of interior dimensions of tractors and tractor sleeping berths and, after consultation with equipment manufacturers, is to report its findings and recommendations to the National Negotiating Committees. The Equipment Committee met several times with MVMA and individual company representatives and requested that MVMA provide information on anthropometrics and on the state-of-the-art of cab design. MVMA responded to the Equipment Committee's request and conducted a state-of-the-art review of truck driver anthropometrics and cab space (Appendix I).

We found no current data that objectively relates all factors of interior cab space with the real world performance capability of drivers. Accordingly, we recommended a comprehensive study of the anthropometrics of the national truck driver population, including functional measurements of truck drivers in their work space, and the establishment of standard techniques for measuring interior cab dimensions, in an attempt to define to define truck driver space requirements.

Such a study is now underway under the auspices of SAE—the national automotive and aerospace engineering society. Manufacturers, motor carriers, the National Highway Traffic Safety Administration, the Bureau of Motor Carrier Safety and the Teamsters have joined in funding this cooperative research effort. Furthermore, the Teamsters and carriers have agreed through their National Master Freight Equipment Committee to postpone recommending any action on interior cab and sleeper berth dimensions until the SAE study is completed. In the interim, carriers have agreed to attempt to accommodate any driver who is not able to fit behind the steering wheel of a unit.

It is important to recognize that today's trucks accommodate most drivers satisfactorily; the concern is with respect to those men and women in the upper and lower extremes of the anthropometric ranges. MVMA agrees with the National Master Freight Equipment Committee that it is premature to specify cab dimensions until the SAE study is completed.

Despite the lack of nationally representative driver anthropometric data and a lack of standard cab measurement practices, individual manufacturers have increased driver space and improved comfort in redesigning truck cabs. Figure II illustrates a dimensional comparison of one manufacturer's new COE to the model it replaced. In almost every instance, including all dimensions relating to cab length, the amount of space has been increased.

There also exists an assumption that long conventional cabs provide more interior space than COE's. Such a generalization is incorrect. Figure III illustrates one manufacturer's new COE in comparison to that manufacturer's long conventional. The COE has more room between the steering wheel and seat back (19.3 vs 17.0 inches), and approximately 19 percent more space overall, as shown by the cross-hatched area.

There simply is no substantiation to claims that manufacturers are sacrificing space inside cabs for longer trailers. Indeed, more space is being provided. Merely setting aside a 15-foot tractor allowance by establishing a 45-foot trailer length will not in and of itself increase cab interior space.

RIDE QUALITY

It is asserted by some that the "COE" tractor, compared with the conventional cab configuration, degrades ride quality. This assertion grossly over simplifies a complex, subjective matter. Truck ride quality cannot be reduced to a simple question of tractor length or cab configuration. Ride quality is an important element in the driver's environment, and involves many factors such as loading, vehicle and suspension design, tires, the highway, the driver and his or her perceptions.

In May of 1979, MVMA's panel of truck ride quality experts organized a ride quality demonstration program. The participants were: professional truck drivers, the Teamsters, government administrators and program managers, the press, trucking industry representatives, company executives and technical personnel. The purpose was to provide information to aid in the development of sound research programs on truck ride and orient participants to the significant efforts which manufacturers have undertaken to improve truck ride in recent years.

A 567 mile ride experience involving 16 tractor/trailer combinations was undertaken. Comparisons of fifth-wheel location, front axle load, tractor configuration, tractor and trailer suspension, trailer loading, wheel base, and older and newer cab design were made. Evaluations of overall ride, vibration, noise, temperature, seat comfort and space were made.

Professional drivers' ratings were compared to trip participants. Some myths were dispelled and some truths confirmed. The complexity and the many variables affecting truck ride were confirmed. Subjective judgments varied. What was important to one person was not important, or as important, to another. For the vehicles involved, participants generally were not able to distinguish any significant difference in different fifth wheel locations or from increasing front axle loads. Changing wheel base made little difference. Ratings which differed between cab configurations were influenced by factors beyond just vibration.

A comparison of one manufacturer's cab-over-engine tractor involving the newest design in comparison to the model it replaced, yielded the greatest difference observed in both participants and professional drivers ratings. By every recorded measure, vibration, noise, temperature, seat comfort and elbow, head and leg room, the newer unit was rated vastly superior.

Numerous factors influence any evaluation of ride quality but, vibration was found to be most influential. The results of several of the paired comparisons illustrated that vehicle differences, e.g., front axle load, cab configuration, fifth wheel placement are not clear cut, and do not necessarily influence ride quality in a way which many expected. Finally, the evaluations support the fact that manufacturers are producing trucks with numerous ride quality improvements. (A report of the demonstration results is Appendix II)

Certainly, a 45-foot trailer limitation will have no direct effect on the quality of ride or driver comfort.

SAFETY

The safety of the "COE" cab configuration and doubles is another issue that concerns all parties interested in improving highway safety. Claims that shorter "COE" tractors and "doubles" are unsafe are not substantiated and do not contribute to identifying and correcting unsafe conditions on the road, whether vehicle, highway, or driver related.

While problems may exist related to the safe operation of commercial vehicles on the Nation's highways, available data do not support the assertion that a conventional cab configuration provides more safety and comfort than a cab-over-engine tractor, and that therefore restrictions on trailer lengths will improve road safety.

In fact, in an attempt to evaluate several hypotheses on truck safety suggested by a member of the National Motor Vehicle Safety Advisory Council in 1976, MVMA commissioned two separate studies by Calspan and Southwest Research Institute. One hypothesis was that "the crashworthiness of tractors has decreased since the hood and extra distance between the driver and the front bumper are now gone." The first study reported that no representative data were available to effectively evaluate this statement. The second study found no difference in the severity of injuries sustained in accidents involving conventional tractors compared to cab-over-engine tractors.

MVMA has continued to fund accident investigation research in a further search for any relationship between cab style and accident frequency and/or severity. Under our sponsorship, the Highway Safety Research Institute recently completed a study of "The Effect of Cab Style on the Accident Experience of Heavy Trucks" and concluded: ". . .considering only authorized carriers, the two cab styles exhibit very similar injury and fatality rates" based on BMCS data. Based on Fatal Accident Reporting System (FARS) data, "considering all long-range operations, private and authorized, the fatality rate is higher for the cabover style."

HSRI cautioned "there is certainly room for argument about these findings" and that "bias in the missing data," and difficulty in classifying tractors, and matching the exposure and accident sets, plus differing operating conditions between the cab types, limited the ability to draw firm conclusions.

The government has also sponsored studies to learn more about the accident involvement and injury characteristics of semitrailer combinations and different cab styles.

The results are revealing: recently, Secretary of Transportation Drew Lewis, in response to a National Highway Safety Advisory Committee request for DOT to develop model length limit regulations, cited results of a study conducted for the Federal Highway Administration by Bio-Technology, Inc., which concluded the following:

"The accident involvement rates of tractor-semitrailer combinations with 40-foot versus 45-foot trailers were compared, and there was no statistical difference in the accident experience of the two vehicle types. Further, when the accident rates for tractor-semitrailer combinations with conventional versus cab-over-engine tractors were also compared, again no difference was noted. Thus, based on the approximate-

ly 2,000 accidents contained in the 1U study, no definitive statements can be made linking trailer length, and inferentially cab size, to higher or lower accidents rates."

MVMA concludes there isn't any firm evidence that longer, multiple trailer combinations are less safe than a single trailer unit, nor that a particular cab style engenders unsafe driver conditions or that under comparable operating conditions the "COE" is more dangerous to drivers than the conventional configuration.

In our opinion, there is no compelling reason for a 45-foot trailer limit for the 60-foot tractor-semitrailer. Accordingly, we recommend the provision of S. 1402 which establishes a 45-foot trailer length limit be deleted from the bill. The productivity and energy conservation gains possible from the uniform national width and lengths should not be denied the Nation on the basis of intuition or emotion.

DIVERSION OF FREIGHT FROM RAILROADS

There have also been allegations that increased truck size and weight limits divert traffic from rail to truck, negatively impacting the railroads. Data on intercity freight ton-miles by mode from Table V show that during the last decade, a period when truck size and weight limits substantially increased, railroads actually gained as much traffic as trucks did. In addition, DOT recently estimated freight diversion from rail to truck for a variety of truck size and weight scenarios and concluded that in no case would the anticipated shift exceed 2 percent. We conclude that allegations that railroads will somehow suffer from improved truck productivity are groundless.

MVMA commends the sponsor of this bill for the significant step forward this legislation represents because it will enhance the trucking industry's ability to move goods more efficiently help combat inflation, and benefit the Nation's economy.

TABLE I.—1981 SUMMARY OF STATE LENGTH AND WIDTH LIMITS

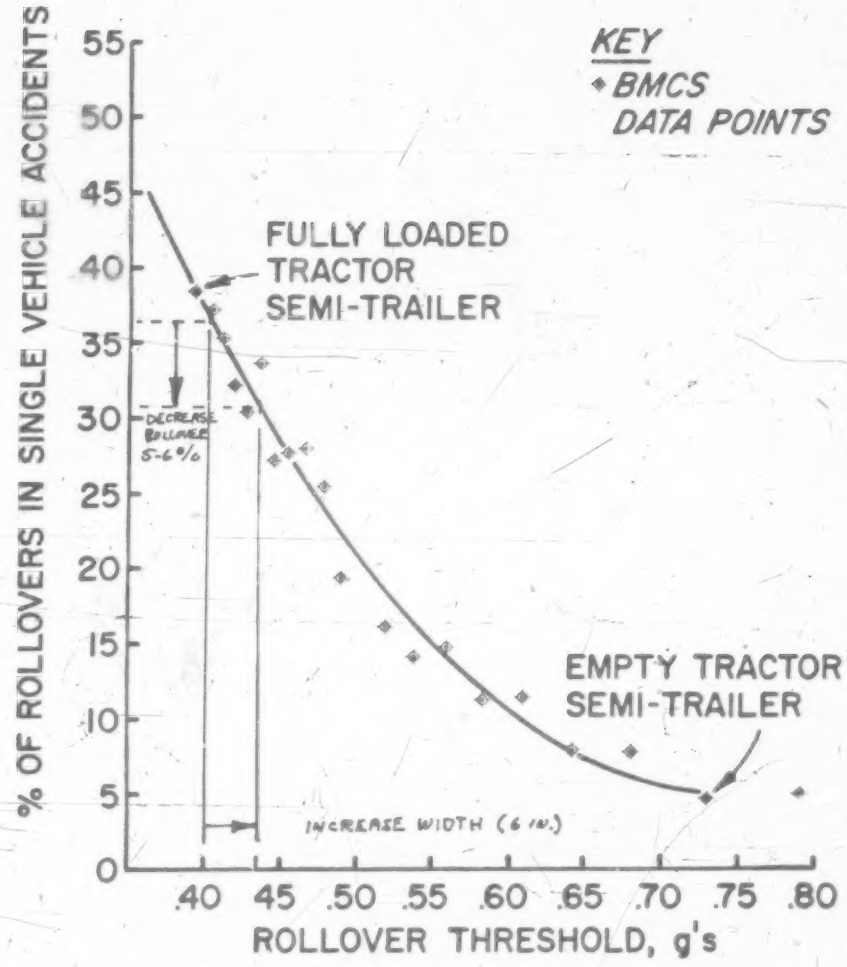
State	Tractor semitrailer		Semitrailer	Doubles	Width
	60 feet and over	Under 60 feet			
Alabama	60		NL	NP	96
Alaska	65		45	70	96 A
Arizona	65		NL	65	96 B
Arkansas	60		NL	65	96
California	60 C		40 C	65 C	96 D, A
Colorado	70		NL	70	96 A, B
Connecticut	60 E		NL	NP	102
Delaware	60		NL	65	96
District of Columbia		55	NL	NP	96
Florida		55F	NL	65 DH	96
Georgia	60		45	60	96 A
Hawaii	60		NL	65	108
Idaho	65 I		NL	75 I	102 H
Illinois	60		NL	65 DH	96 A
Indiana	60 K		NL	65	96 J
Iowa	60		45 AA	65 L	96
Kansas	65		NL	65	96 B
Kentucky		55 M, N	NL	65	96
Louisiana	65		NL	65 DH	96 J
Maine	60		45	NP	102 A, H
Maryland		55	NL	65 DH	96 A
Massachusetts	60		45	NP	96 A, B
Michigan	60		45	65 DH	96 B, O
Minnesota	60 T		45 P, AA	65 DH	96
Mississippi	60 Q		NL	60 Q	96
Missouri	60 S		NL	65 DH	96 A, R
Montana	65		NL	65	102 H
Nebraska	65		NL	[illegible]	96 A
Nevada	70		NL	[illegible]	96 A, B
New Hampshire	60		45	[illegible]	96 A, B
New Jersey		55	NL	[illegible]	96
New Mexico	65		NL	[illegible]	96 A, B, O
New York	60 V		45 U	55 [illegible]	96
North Carolina		55	NL	NP	96
North Dakota	65 F		NL	65 F	96 O
Ohio	60		45	65	96

TABLE I.—1981 SUMMARY OF STATE LENGTH AND WIDTH LIMITS—Continued

State	Tractor semitrailer		Semitrailer	Doubles	Width
	60 feet and over	Under 60 feet			
Oklahoma	65		NL	65	96 A, O, W,
Oregon	60 DH		NL	75 DH	96 A, D
Pennsylvania	60		NL	NP	96 A, O
Rhode Island	60		NL	NP	102
South Carolina	60		45 BB	NP	96 A
South Dakota	70 Y		NL	70 Y	96 X
Tennessee	60 Z		47	NP	96
Texas	65		NL	65	96 A
Utah	65 Y		45	65 Y	96
Vermont	60		NL	NP	102 H
Virginia		55	NL	NP	96 A
Washington	65 I		45	65 Y	96 A, D
West Virginia		55 DH	NL	NP	96
Wisconsin	60		48	65 DH	96
Wyoming	85		NL	85	102 H

Notes:
NL = No limit.
NP = Not permitted.
A = Not including mirrors and accessories attached thereto.
B = 102 inches across tires.
C = Semitrailer kingpin-to-rear axle may not exceed 38 feet.
D = 100" across tires.
E = 60 feet allowed after October 1, 1981, semitrailer length is limited to 45 feet in combination.
F = Longer on designated highways.
DH = Designated highways only.
G = Allowed by permit only.
H = 96 on interstate.
I = Longer length allowed if stinger steered.
J = 102" with load.
K = 60 feet beginning January 1, 1982.
L = Allowed by U.S. Supreme Court decision.
M = Plus 5 percent tolerance.
N = 60 feet if carrying unmanufactured tobacco products.
O = 102" width on designated highways.
P = Plus 6" for bumpers.
Q = 65 feet allowed if vehicle weighs over 40,000 lbs.
R = 108" width in certain areas.
S = 60 feet allowed after September 28, 1981.
T = 65 feet by annual permit.
U = 46 feet if combination is under 65 feet.
V = Combination not allowed in NYC + certain counties.
W = Width may exceed 96" by an unspecified amount for tire bulge.
X = 99 inches with permit.
Y = Higher with permit.
Z = Semitrailer cannot exceed 47 feet in tractor-semitrailer combination.
AA = Kingpin to rear axle may not exceed 40 feet.
BB = Trailers registered before June 11, 1980, exempted for life by grandfather clause.

Figure I



Percent of single-vehicle accidents in which rollover occurs as a function of the vehicle's inherent rollover threshold, in g's

TABLE II.—TRENDS IN VAN TRAILER LENGTH

Length (feet) at least	But less than	Percent of production			
		1972	1974	1976	1978
50					0.06
47	50				.04
45	[1] 47	31.70	41.80	37.00	52.08
42½	45	3.10	5.30	18.50	7.23
40	42½	50.20	41.40	28.20	32.68
	40	15.00	11.50	16.30	7.91

[1] Includes trailers longer than 47 feet prior to 1978 survey.
Source: Truck Trailer Manufacturers Association.

TABLE III.—HISTORICAL TRENDS IN HEAVY TRUCK SALES BY TYPE OF CAB

[Percent of trucks over 33,000 Lbs. GVW]

Year	Cab over engine (COE)	Conventional
1959	12	88
1960	17	83
1961	20	80
1962	29	71
1963	29	71
1964	30	70
1965	32	68
1966	34	66
1967	33	67
1968	38	62
1969	39	61
1970	39	61
1971	40	60
1972	43	57
1973	43	57
1974	39	61
1975	34	66
1976	41	59
1977	43	57
1978	39	61
1979	40	60
1980	38	62

Source: Motor Vehicle Manufacturers Association of the United States, Inc.

TABLE IV.—MINIMUM BUMPER TO BACK OF CAB (BBC) DIMENSIONS OF NEW MODEL COE'S VERSUS MODEL REPLACED

MFR	Old model	BBC (index)	New model	BBC (index)	Year replaced
GMC	F/D 9500	48	Astro 95	54	1969
Ford	WT 9000	52	CL 9000	54	1978
IHC	CO 4070B	59	CO 9670	63	1981
Peterbilt	352	54	362	54	1981

TABLE V.—INTERCITY FREIGHT MOVEMENT BY MODE

[Ton-miles, in billions]

	Motor trucks [1]	Railways [2]	Inland waterways [3]	Pipelines	Domestic airways	Total
1980 [4]	565	921	420	575	5,000	2,486
1979	628	920	431	605	5,230	2,589
1978	602	868	409	586	5,210	2,470
1977	555	834	366	546	4,910	2,308
1976	510	800	373	515	4,540	2,203
1975	454	759	342	507	3,730	2,066
1974	495	852	355	506	3,910	2,212
1973	505	858	358	507	3,950	2,232
1972	470	784	338	476	3,700	2,072
1971	445	746	315	444	3,500	1,954
1970	412	771	319	431	3,300	1,936

[1] Ton-miles between cities and between rural and urban areas included, whether private or for hire. Rural-to-rural movements and city deliveries are omitted.

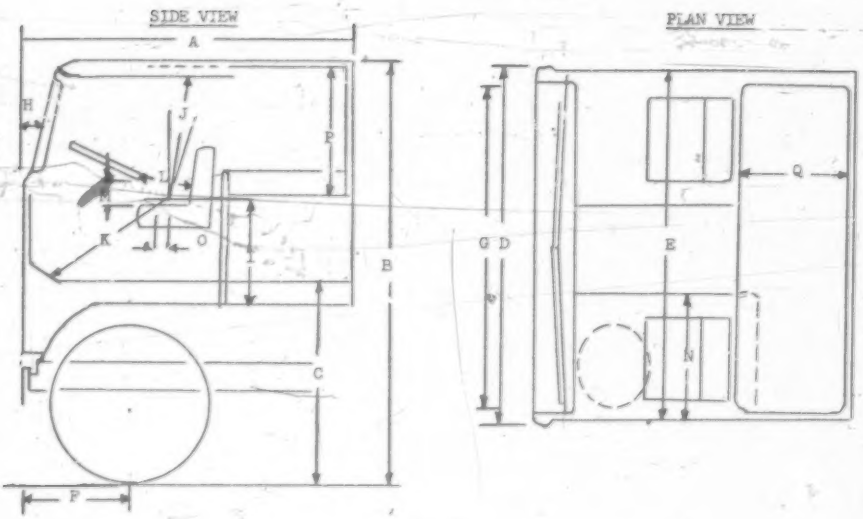
[2] Revenue ton-miles.

[3] Does not include coastal and intercoastal ton-miles.

[4] Estimate.

Figure II

1978 FORD CL-SERIES PACKAGE DIMENSIONS
VERSUS 1974 FORD W-SERIES a/

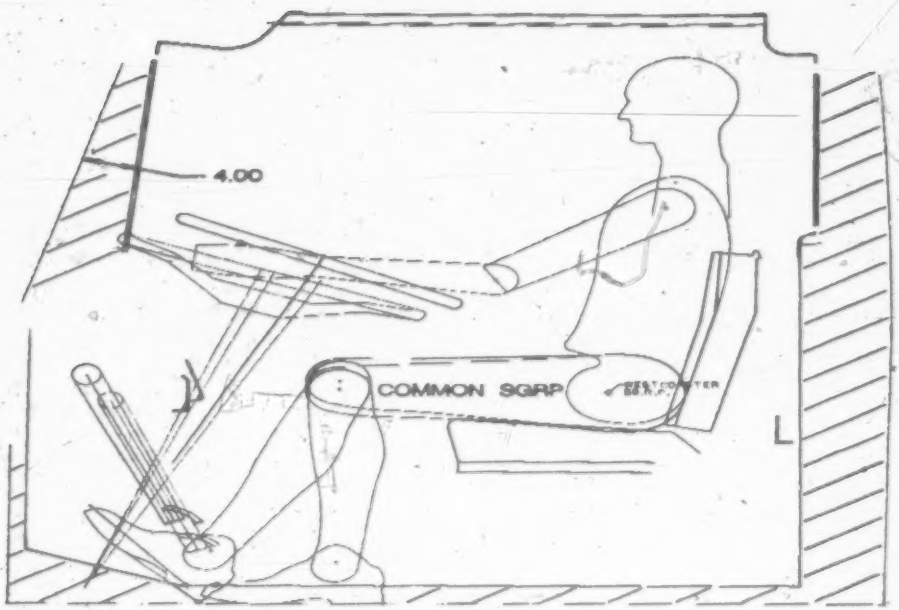


Overall Dimensions (Inches)	1978 CL-Series	1974 W-Series	Improvement
A. Primary Sleeper BBC	88.0	82.0	+ 6.0
B. Overall Height	121.2 b/	113.6	+ 7.6
C. Floor to Ground	63.2 c/	55.6	+ 7.6
D. Overall Width - Sheetmetal	95.5	93.3	+ 2.2
E. Overall Width - Inside	91.8	86.0	+ 5.8
F. Front Overhang	28.0	28.0	-
G. Front Track	82.2	76.7	+ 5.5
H. Windshield Angle (Degrees)	15.0	12.5	+ 2.5
Driver's Compartment (Inches)			
I. H Point to Floor	19.4	19.7	- 0.3
J. Effective Head Room	42.5	41.2	+ 1.3
K. Effective Leg Room	40.1	36.2	+ 3.9
L. Steering Wheel to Seat Back	16.3	13.6	+ 2.7
M. Steering Wheel to Cushion	8.9	6.9	+ 2.0
N. Room at Hip	29.6	31.4	- 1.8
O. Seat Travel	5.0	4.0	+ 1.0
Sleeper Compartment (Inches)			
P. Compartment Height	38.8	41.5	- 2.7
Q. Mattress Width	36.0	30.0	+ 6.0

a/ Sleeper Cab
b/ 123.2" w/Cab Air Ride suspension
c/ 65.2" " " " " "

Figure III

DRIVER SPACE



NEW COE VS CONV.

SGRP = Seating Reference Point

The CHAIRMAN. Thank you.

Which of you gentlemen is going to go next?

Mr. YASHIEJKO. I am chairman of the highway facilities committee of the National Industrial Traffic League. Accompanying me today is John Donelan, league counsel.

The National Industrial Traffic League is an organization of 1,800 shippers. Throughout our more than 70-year history, we have been a spokesman for business and industry on transportation matters.

After reviewing S. 1402, the League's highway facilities committee supports the intent of the legislation. We believe this measure could add our national efforts to increase productivity, conserve energy, curtail inflation, and improve safety. But we are concerned that one of the bill's provisions, the 45-foot restriction on single trailers, could work to undermine our mutual efforts in this area.

A February, 1980 study conducted by the DOT on interior cab dimensions recommended, because of the difficulty in making certain measurements for interior cab dimensions, specific dimensions should not be specified in Federal regulations at this time. They also recommended that representatives of vehicle manufacturers, vehicle users, labor organizations, and the Federal Government should work together to develop a standard method for taking anthropometric measurements. This is in progress and should be completed by the end of the year.

We have supplied a list of the subcommittee membership to you in our testimony, and we have included as an attachment in our written testimony a copy of the agreement between the International Brotherhood of Teamsters and Trucking Management, Inc., which is the motor carriers negotiating arm, which not only recognizes the study but also provides for a private sector agreement regarding this issue.

Our findings indicate that a 45-foot trailer restriction would, one, prevent the reduction in road miles traveled of about 2 billion miles, prevent fuel savings of about 367 million gallons, and prevent about a $1.2 billion reduction in freight costs.

Now these figures are conservative since they do not include the higher productivity achieved by certain segments of the shipping industry, nor do they include the gains realized by those shippers and carriers who are currently using trailers in excess of 50 feet. In addition, these figures have not calculated the impact on private carriage, which is estimated to be equal to the for-hire operations.

I would mention that the potential 367 million gallons of fuel could be saved by added cubic capacity. As we know, incremental fuel supply is imported from sources that negatively impact our balance of trade.

In 1980, the United States ran a trade deficit of $21.8 billion. Gains in exports of manufactured goods helped overcome an unprecedented $71 billion oil deficit.

Again, I would like to state that we support the intent of S. 1402 and the reforms that it proposes for truck size and widths. We believe these reforms will provide substantial benefits to all segments of our national transportation system.

However, we are strongly opposed to the imposition of a 45-foot restriction on single trailers. We believe that this restriction lacks

the scientific foundation necessary to justify the erosion of the benefits that this legislation is intended to achieve.

To assure that this legislation meets the needs of all parties, the league's highway facilities committee has provided your staff with strengthening and improving amendments. We urge your favorable consideration of these proposals.

In conclusion, we believe that S. 1402 is necessary to meet our country's need to improve productivity and fuel efficiency of our interstate trucking industry. However, we would caution the committee against negating any of the benefits promised by this legislation by the imposition of 45-foot restriction on single trailers. We do not see the need to impose as onerous a burden as this restriction on those carriers, both private and for-hire, who currently are safely operating these larger trucks.

We believe SAE's subcommittee is addressing the issue of cab dimensions, limiting the trailer size to 45 feet, and it puts up a wall to any future gains to be had in productivity for cargo-carrying capacity. It not only stymies it, but in effect regresses and penalizes us.

Thank you very much, Mr. Chairman.

[The statement follows:]

STATEMENT OF MYRON YASIEJKO, ON BEHALF OF THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE

Mr. Chairman, members of the committee, my name is Myron Yasiejko. I am chairman of the Highway Facilities Committee of The National Industrial Traffic League. Accompanying me today is John F. Donelan, League Counsel.

The National Industrial Traffic League is a voluntary organization of 1,800 shippers, shippers' associations, boards of trade, chambers of commerce, and other entities concerned with rates, traffic, and transportation services of all modes. It is the only nationwide organization which represents all types of shippers using all modes of transportation to move all types of commodities. Our members, directly or indirectly, are responsible for the routing of about 80 percent of our country's commercial freight.

The League's primary concern is to assure that our national transportation system is sound, efficient, well-managed, privately owned and operated, and that it meets the needs of the nation as well as the needs of shippers and receivers of commercial freight. Throughout our more than 70-year history, the League frequently has been the spokesman for business and industry on transportation matters.

After reviewing S. 1402, Commercial Motor Vehicle Standards Act of 1981, the League's Highway Facilities Committee supports the intent of this legislation. We believe that this measure could aid our national efforts to increase productivity, conserve energy, curtail inflation, and improve safety. As Senator Cannon has said, conflicting state laws on truck lengths are costing the consumer as mush as $2.8 billion annually and are wasting as much as 875 million gallons of fuel a year.

However, we are concerned that one of the bill's provisions—the 45-foot restriction on single trailers—could well work to undermine our mutual efforts in this area. While a strong advocate of safety on our highways, we believe that such a restriction would be arbitrary, without foundation, and not necessarily resulting in any improvement in driver comfort and safety. As we have said in the past, if the cab size and interior dimensions are the issue, we fail to see how limiting the size of the cargo carrying unit would be the best solution to this issue.

A February 1980 study conducted by the Department of Transportation on the interior cab dimensions of heavy duty motor vehicles recommended:

1. Because of the difficulty in making certain measurements for interior cab dimension, specific dimensions should not be specified in federal regulations at this time.

2. Representatives of vehicle manufacturers, vehicle users, labor organizations, and the Federal government should work together to develop a standard method for taking anthropometric measurements.

This cooperative effort called for by DOT currently is in progress and should be completed by the end of this year. The Society of Automotive Engineers' Occupant Dimensional Parameters Subcommittee, with the cooperation of the trucking industry and labor, is conducting the study.

The SAE subcommittee is composed of members from all segment of the trucking community. Its members include the National Highway Traffic Safety Administration, DOT's Bureau of Motor Carrier Safety, the Teamsters, Motor Vehicle Manufacturers Association, Trucking Management, Inc., which is bargaining unit for motor carriers, and Autotransporters. A list of this subcommittee's membership is supplied as Attachment A.

Furthermore, we have included, as Attachment B to out testimony, a copy of the agreement between the International Brotherhood of Teamsters and Trucking Management, Inc., which not only recognizes the study but also provides for a private-sector agreement regarding this issue.

I now would like to identify the importance of trailer size (cubic capacity) to the way our nation ships.

The National Classification Board of the American Trucking Associations conducted an analysis of freight bills of 100 carriers. Of the 112,603 trailers dispatched in one week, it was found that 26 percent dispatched under full weight limits, 44.8 percent released with maximum cube, and 28 percent released on service need.

Since this is indicative of the commercial motor carriers movement, it should serve to highlight the importance of the cubic capacity of the cargo-carrying unit.

Using this ratio as a base, we have taken the mileage traveled by commercial motor carriers and their revenue for 1979 and, very simplistically, but conservatively, attempted to quantify the impact in added fuel consumption and added transportation costs.

Our findings indicate that a 45-foot trailer restriction would (1) prevent a reduction in road miles traveled of about 2 billion miles; (2) prevent fuel savings of about 367 million gallons; and (3) prevent a $1.2 billion reduction in freight costs.

These figures are conservative since they do not include the higher productivity achieved by certain segments of the shipping industry—can manufacturers estimate productivity gains almost twice that used in our calculations—nor do they include the gains realized by those shippers and carriers who currently are using trailers in excess of 50 feet. In addition, these figures have not calculated the impact on private carriage, which is estimated to be equal to for-hire operations.

We have just mentioned that a potential 367 million gallons of fuel could be saved by added cubic capacity. As we know, our incremental fuel supply is imported from sources that negatively impact our balance of trade.

In 1980 the United States ran a trade deficit of $21.8 billion. Gains in exports of manufactured goods helped overcome an unprecedented $71 billion oil deficit.

The methodology used to derive our calculations was as follows:

Given: 1979 Mileage-Combination vehicles—totaled 66 billion miles. Average miles per gallon for combination vehicle was 5.4 in 1979. The Regulated Class I & II revenue in 1979 was $41.2 billion. (Source ATA).

The next most popular trailer size today in excess of 45 feet is 48 feet (note: there are 47-foot and 50-foot trailers in use today). The simple capacity increase from a 48-foot trailer is 6.7 percent.

Calculations:

1. 66 billion miles times 44.8 percent trailers cubing out equals 29,568,000,000 miles where cube is important

2. Times 6.7 percent productivity gain equals 1,981,056,000 miles reduced by added cube

3. Divided by 5.4 m.p.g. equals 366,862,222 gallons of fuel no longer required

4. $41.2 billion Revenue Class I & II times 44.8 percent trailers cubing out equals $18,457,600,000 Revenue where cube is important

5. Times 6.7 percent productivity gain $1,236,659,200 potential freight savings.

Again, I would like to state that we support the intent of S. 1402 and the reforms it proposes for truck size and width. We believe these reforms will provide substantial benefits to all segments of our national transportation system—shippers, carriers, and consumers. However, we are strongly opposed to the imposition of a 45-foot restriction on single trailers. We believe that this restriction lacks the scientific foundation necessary to justify the erosion of benefits that this legislation is intended to achieve.

To assure that this legislation meets the needs of all parties, the League's Highway Facilities Committee has provided your staff with strengthening and improving amendments. We would urge your favorable consideration of these proposals.

In conclusion, we believe that S. 1402 is necessary to meet our country's need to improve the productivity and fuel efficiency of our interstate trucking industry.

However, we would caution the committee against negating any of the benefits promised by this legislation by the imposition of a 45-foot restriction on single trailer length.

We do not see the need to impose as onerous a burden as this restriction on those carriers, both private and for-hire, who currently are safely operating these larger trucks. We believe that the SAE Subcommittee is addressing the issue of cab dimensions. Limiting trailer size to 45 feet puts up a brick wall to any future gains to be had in productivity through cargo carrying capacity. It not only stymies it, but, in effect, regresses and penalizes us.

Thank you very much, Chairman Packwood, for allowing the League to express its views. We offer our continuing support to efforts to safely improve productivity and hope this statement, along with its proposed amendments, will be of use to the committee during its deliberations and in reaching its conclusion. At this time, I will be pleased to answer any questions the committee or staff may have.

ATTACHMENT A

SAE Occupant Dimensional Parameters Subcommittee

Nancy A. Bundra, Chairperson	GMC Truck & Coach.
F. Murray Callahan	Heavy Duty Truck Manufacturers Association.
Tom Carr	Motor Vehicle Manufacturers Association.
William H. Daniels	GM Technical Center Design Staff—Human Factors.
Ruth DeWald	U.S. Army Tank-Automotive Command, HEL Detachment.
Lawrence J. Dupuis, Jr.	GM Technical Center, Engineering Staff.
Sydney B. Fawcett	GMC Truck & Coach.
Alan Freshwater	Mercedes Benz Service Corp.
Tom Gage	International Harvester Truck.
Dave C. Hammond	Ford Motor Co., Office of Safety Research.
Robert E. Heglund	Liberty Mutual.
Carl G. Holstein	GMC Truck & Coach.
J. K. Hubbell	Ford Motor Co., Body, Climate Control and Package Section.
Craig Jones	Mercedes Benz of North America, Inc.
Steve Kraus	ARA Transportation Group.
Charles Kroetsch	International Harvester.
Stefan Larsson	Volvo of America, Corp.
Dr. Charles Overbey	National Highway Traffic Safety Administration.
Warren Rhoaume	International Brotherhood of Teamsters.
N. A. Rini	White Motor Co.
Edwin F. Saxman	Mack Trucks, Inc.
Dr. Richard G. Snyder, Ph. D.	University of Michigan Biomedical Department and Department of Anthropology.
Harold Sullivan	Commercial Motor Freight of Indiana.
Victor Suski	American Trucking Association.
Neill L. Thomas	U.S. Department of Transportation, Bureau of Motor Carrier Safety.
Ken Thompson	Yellow Freight System.
SAE staff:	
Andrew G. Salem and Nancy Newman	Society of Automotive Engineers.
Corresponding members:	
Tony A. Fath	Transport Canada, Crash Avoidance, Automotive Safety Engineering, and Road Safety.
John Klingenberg	Mercedes Benz.
Charles D. Bishop	Peterbilt Motor Co.

ATTACHMENT B

NATIONAL MASTER FREIGHT EQUIPMENT COMMITTEE

Recommended Position—Interior Cab and Sleeper Berth Dimensions

The Occupant Dimensional Parameter Sub-Committee of the Society of Automotive Engineers (SAE) Truck and Bus Cab and Occupant Environment Committee is actively engaged in the anthropometric analysis of the truck driving population and in developing a uniform method for measuring truck cab and sleeper berth interior dimensions. This Committee was established in November, 1979, as a result of the NMFA contractual provision on Interior Cab and Sleeper Berth Dimensions. We understand their work will be completed before December 31, 1981.

The National Master Freight Equipment Committee recommends that due to the highly complex and technical nature of the study of the safety aspects of interior cab and sleeper berth dimensions that our committee be given an extension to January 31, 1982, for our report and recommendations.

With the benefit of the SAE Report, the Committee feels it will be in a better position to establish minimum clearances.

If the SAE Report is incomplete or not forthcoming, the issue of Interior Cab and Sleeper Berth Dimensions will be addressed at that time by the National Master Freight Equipment Committee for final action.

Employers shall attempt to accommodate any driver who is not able to fit behind the steering wheel of the unit.

The CHAIRMAN. Thank you.

Now who's going next?

Mr. TURNER. My name is Gerald C. Turner. I am manager of transportation regulation for Owens-Illinois, Inc. I am accompanied today by Mr. Robert A. Ragland, director of regulatory reform and Government organization for the National Association of Manufacturers.

I am appearing today on behalf of the National Association of Manufacturers, which appreciates this opportunity to comment on the Uniform Motor Vehicle Standards Act of 1981, S. 1402.

In this regard, NAM is pleased to support the efforts of this bill's sponsors and this committee to establish a uniform national standard for commercial motor vehicle lengths on interstate highways. This action is critical to industry in its efforts to promote efficiency in the transportation of raw materials and the distribution of finished products by motor common carriers of properties.

Moreover, this bill has the potential to dramatically improve both fuel efficiency and overall fleet utilization. These results are clearly consistent with our desire to contribute, wherever possible, to the revitalization of American industry.

The NAM, however, believes that this committee should consider a series of amendments which are consistent both with safety and efficiency. Specifically, NAM supports revisions which will permit the uniform national standard of 60 feet on tractor-trailer combinations with no restriction on the length of any single unit within the combination. This would effect a 60-foot no-restriction for "semis" and a 65-foot no-restriction for "twins."

As introduced, S. 1402 establishes a 45-foot restriction on single trailers. In our judgment, this restriction vitiates the ultimate goal of S. 1402, which is to improve productivity through efficiency.

In this regard, considering only for-hire intercity freight, NAM notes that 33 million gallons of diesel fuel are conserved annually for each foot of trailer length beyond 45.

Therefore, by permitting the use of longer trailers, this bill could save many millions of gallons of diesel fuel annually. What is more, using 1979 figures, 48 to 50 percent of all 5-axle trucks

engaged in the distribution of general freight "cubed out" before reaching allowable weight limitations. For example, each additional 3-foot increment of space over 45 feet contributes a minimum of 6.7 percent to the productivity of each movement.

In addition to our suggested length revisions, NAM urges this committee to favorably consider a series of definitional changes which serve to clarify the intent of this legislation. Attached to my statement is appendix A, a summary of the revisions supported by the NAM.

We would like to note that these were developed by the National Industrial Traffic League and are supported in their entirety by the National Association of Manufacturers.

Mr. Chairman, this concludes my prepared remarks, and I would be glad to respond to any questions at the end of the panel discussion.

[The appendix follows:]

APPENDIX A

SUMMARY OF REVISIONS

In our proposed revision, additions are underscored and deletions are cross-hatched. In summarizing our revision, Section 5(a) would effect a minimum national standard of 60 feet, no restriction on the length of single units within any combination. This would effect a 60 NR for semis and 65 NR for twins.

The definitions provided in new section 3 are necessary to make it absolutely clear that vehicles in private carriage are covered. Insertion of the word "minimum" in the prologue and in section 2(4) and (5) is necessary to make it clear that states are not precluded from permitting vehicles which exceed the standard set forth in the bill. The bill does not now intend to restrict such state regulations but could be subject to misinterpretation without the word "minimum".

The word "truck" preceding "tractor semitrailer combination" in section 5(a) and (b) is deleted. The deletion will avoid confusion on "truck tractor semitrailer" combination which could be read to mean straight truck-tractor semitrailer combination. In section 6, the words "loading" and "unloading" are added to permit operations of vehicles to and from docks which are not part of a "terminal".

New section 8 is a savings clause intended to preserve the existing right of individuals to challenge burdensome state regulations. The bill is not a comprehensive regulation of all aspects of motor vehicles, and the clause makes it clear that it is not intended to grant to the states authority to enact any regulation on subjects not specifically covered in the bill, no matter how burdensome, free of judicial oversight.

The CHAIRMAN. Mr. Turner, thank you.

Mr. Bolger?

Mr. BOLGER. I would like to yield to Donald G. Oren, please.

Mr. OREN. I am the president of Dart Transit Co., a regulated motor common carrier headquartered in St. Paul, Minn. With me is Dan Bolger, corporate director of physical distribution for Anchor Hocking Corp. We are appearing on behalf of an ad hoc group of motor carriers, shippers, and associations dealing with the transportation industry. For identification purposes, we refer to ourselves as the Coalition for Energy Efficient Transportation which title also reflects our goals and objectives. The group, which includes 71 motor carriers, 108 shippers, and 23 associations dealing with transportation, is a true cross segment of the American business community. A list of the members is attached.

We believe the legislation proposed by Senator Cannon is essential to insure that transportation by motor vehicle is responsive to the national interest of increased economies and efficiencies for business and society. We have submitted to the committee a state-

ment by Mr. Bolger, which reflects a representative shipper viewpoint within our group and my statement embracing factual data concerning my own company's viewpoints and experience.

The position of our group may be briefly stated as follows:

One, uniform minimum Federal standards are imperative to economically efficient interstate transportation.

Two, S. 1402 with minimum amendments is a positive approach to the solution of a problem.

Three, the amendments proposed by the NIT League are supported by our group. The efficiencies and fuel savings presently experienced with trailers exceeding 45 feet in length must be continued. Our position is based on the experience of many of our members who are operating trailers exceeding 45 feet in length at the present time or are being served with such equipment without any known problem.

To the extent we have safety statistics, we have found no evidence that trailers exceeding 45 feet in length create any safety hazards. In fact, the experience of my own company, which now operates 260 48-foot trailers, indicates that the safety experience with such equipment has been better than with shorter trailers.

We have also been unable to find any significant evidence that driver comfort is compromised by the operation of longer trailers. The tractors which my company uses, for example, are the same, whether we pull a 48 or a 45-foot trailer. Although the issue of trailer length and tractor cab dimension may be related, the latter issue should be resolved in a separate study; however, the benefits of more efficient, longer trailers should not be delayed in the meantime. The fuel savings and other benefits are too important.

In my own company's experience, the use of our larger trailers in serving the container industry has resulted in an approximate 10-percent fuel savings. Each mile operated becomes a more productive one when the same amount of freight can be handled on fewer vehicles. Generally, using longer trailers, we can ship more product at less cost per unit and can also decrease handling and administrative costs.

These savings are eventually reflected in consumer prices. Examples of savings are given in our written testimony.

We thank the committee for the time and energy that it is devoting to this important issue. And Mr. Bolger and I would be pleased to answer any questions the committee may have.

Thank you.

[The statements follow:]

STATEMENT OF THE COALITION FOR ENERGY EFFICIENT TRANSPORTATION

My name is Donald G. Oren. I am President of Dart Transit Company, a regulated motor common carrier headquartered in St. Paul, Minnesota. With me is Mr. Daniel C. Bolger, Corporate Director of Distribution for Anchor Hocking Corporation, a manufacturer headquartered in Lancaster, Ohio. We are appearing on behalf of an ad-hoc group of motor carriers, shippers, and associations dealing with the transportation industry. For identification purposes, we refer to ourselves as The Coalition for Energy Efficient Transportation, which title also reflects our goals and objectives.

Our group, which represents 71 motor carriers, 108 shippers, and 23 associations dealing with transportation, is a true cross-segment of the American business community. A list of the members is attached to the written summary of my presentation.

We believe that the legislation proposed by Senator Cannon is essential to insure that transportation by motor vehicle is responsive to the national interest of increased economies and efficiencies for business and society.

We have studied Senate Bill 1402 in detail and have requested comments, suggestions, and data from our members concerning it. This presentation reflects what we believe to be a consensus of views which we hope will be useful in resolving the issues presented by the bill.

Part of the written testimony submitted to the Committee includes a statement by Mr. Bolger which reflects a representative shipper viewpoint within our group and a statement embracing more extensive factual data concerning my own company's viewpoints and experience in operating motor carrier equipment in the continental United States.

The position of our group may be briefly stated as follows:

1. Uniform minimum federal standards are imperative to economical and efficient surface transportation which is essentially interstate in nature.

2. Senate Bill 1402 reflects a positive approach to the solution of the problem, and with minimum, but significant, amendments, will be considered historically as sage legislation when enacted.

3. The amendments proposed by The National Industrial Traffic League are supported by our group as essential changesa to assure that the maximum objectives of the bill are achieved. The efficiencies and economies presently being experienced through the use of trailer equipment exceeding 45 feet in length must be continued.

Our position is predicated on the experience of many of our group who are operating trailer equipment exceeding 45 feet in length at the present time, of being serviced with such equipment, and have enjoyed the resulting benefits without any known problems.

I should like briefly to address some general issues which appear to focus significantly on trailer length.

Initially, there is the question of safety. To the extent we have been able to accumulate statistics, we have found no evidence that trailers exceeding 45 feet in length create any safety hazards. In fact, the experience of my own company, which now operates two hundred sixty 48-foot trailers, reflects that our safety experience with such equipment has been better than with shorter length trailers. Our group is unaware of any contrary experience or evidence.

We have also been unable to find any significant evidence that driver comfort is prostituted by the operation of longer trailer equipment. The tractors which my company uses, for example, would be and are the same whether we pull 48- or 40-foot trailers. More significantly, however, is that we feel that although the issue of trailer length and tractor cab dimension may be related, the latter issue should be resolved in a separate legislative study and/or proposal. If standards are ultimately adopted regarding tractor cab dimension, these standards, if related to overall vehicle dimensions, will also resolve the trailer length issue. However, the benefits of longer trailer units should not be delayed pending the resolution of the latter issue.

The foregoing is particularly true since a significant benefit accruing from the use of the efficient length trailers is fuel consumption savings. This benefit is discussed in detail in our written testimony. It should suffice at this time to state that in my own company's experience, the use of our larger trailers in serving the container industry has resulted in an approximate 10 percent fuel savings.

Closely related to fuel economies is the savings which can and are experienced with respect to wear and tear on the motor carrier equipment. Each mile operated becomes a more productive one when the same amount of freight can be handled on fewer vehicles.

Generally, using longer trailers can ship more products at less cost per unit and can also decrease handling and administrative costs. These savings are eventually reflected in consumer prices. Examples of savings are given in our written testimony.

We commend the Committee for the time and energy it is devoting to this important issue and look forward to the time when the legislation under consideration, including the amendments we consider critical, will improve the efficiency and economy of our country's motor carrier transportation system.

Mr. Bolger and I would be pleased to answer any questions the Committee may have.

Thank you.

ORGANIZATIONS OPPOSED TO 45-FOOT TRAILER RESTRICTION

Alabama.—Merchants Transfer Co.

California.—Ampex Corp.; Amstar Corp.-Spreckels Sugar; Blackburn Truck Lines; Brockway Glass Co.; California Manufacturers Assoc.; Don Carr Trucking; Conti Trucking, Inc.; Crown Zellerback Corp.; GuthMiller Trucking, Inc.; Imperial Freight Lines; Jones Hamilton Co.; Kaiser Steel Corp.; Louisiana Pacific; (Container Products Division); Queen Trucking & Service ; Russell Truck Lines; Schaldach Container Corp.; Sweetheart Cup Corp.; United Vintners

Colorado.—Curtis, Inc.; National Cattlemen's Assoc.; National Insulation; Ringsby Truck Lines, Inc.; Rockwool Industries, Inc.; Wintz Motor Freight, Inc.

Connecticut.—American Can Company; Bowater Sales Company; Combustion Engineering, Inc.; Continental Group; Nelson Freightways. Inc.; Stauffer Chemical Co.; GTE Sylvania, Inc.; Union Carbide; Uniroyal, Inc.; West End Moving & Storage, Inc.

Delaware.—E.I. DuPont DeNemours & Co.

Florida.—Commercial Carrier Corp.; Distribution Service of Florida, Inc.; Florida Rock & Tank Lines, Inc.;

Jartran; Meat Dispatch, Inc.; Ryder Truck Lines, Inc.

Georgia.—Brown Transport Corp.; Coca-Cola; Durrance Transfer Co., Inc.

Illinois.—Amoco Oil Co.; Arbet Truck Lines, Inc.; Brunswick Corp.; C.F.S. Continental; J.L. Clark Manufacturing Co.; Container Corporation of America; Ekco Houseware; Elite Graphics, Inc.; Farm & Industrial Equipment Institute; Fast Motor Service, Inc.; Fibre Box Assoc.; Illinois Manufacturers Assoc.; International Harvester Co.; Jepsen Moving & Storage; Keebler Co.; Martin-Brower Co.; Monor Trailer; National Can Co.; R.M.E. Trucking; Rheem Manufacturing Co.; Stone Container Corp.; Swift & Co.; United States Gypsum Co.; Willett Nationalease Co.

Indiana.—Ball Corp.; Carter Cartage Co., Inc.; Central Soya Co.; Eli Lilly & Co. Schilli Motor Lines, Inc.; Stokely Van Camp, Inc.; Walt's Drive-A-Way Service, Inc.; Yankee Motor Freight.

Kentucky.—W. T. Young Storage.

Louisiana.—Olin Kraft, Inc.; Saia Motor Freight.

Maryland.—Maryland Cup Corp.; The Maryland Transportation Co.

Massachusetts.—Kenmore Transportation; Ro-Mar Terminal & Warehouse Co.

Michigan.—Clark Equipment Co.; Gra-Bell Truck Line, Inc.; Mannion Express Co.; Whirlpool Corp.

Minnesota.—Conwed Corp.; Dart Transit Co.; The Pillsbury Co.; 3M Co.; Tyson Truck Lines, Inc.

Missouri.—Anheuser-Busch Cos., Inc.; Boise-Cascade; Consolidated Aluminum Corp.; Interstate Brands, Inc.; Mallinckrodt, Inc.; McDonnell Douglas Corp.; Nebraska Express; Orecheln Bros. Truck Lines; Riss International Corp.; Russell Stover Candies, Inc.

New Jersey.—Air Freight Systems, Inc.; GAF Corp.; Gulf States; Johnson & Johnson; Langer Transport Corp.; Lehn & Fink Products Groups; National Freight, Inc.; New England Motor Freight, Inc.; People's Express Co.; Reliable Van & Storage; Union Camp Corp.

North Carolina.—Pilot Freight Carrier, Inc.

New York.—American Home Foods; Carborundum Co.; Celanese Corp.; Clevepak; Corning Glass Works; Fredonia Express, Inc.; W. R. Grace; Perkins Trucking Co.; William J. Reiner Carting Co., Inc.; Thatcher Glass Mfg. Co.

Ohio.—American Greetings Corp.; Anchor Hocking Corp.; Carlon; Commercial Lovelace Motor Freight; Davies Can Co. (Van Dorn, Inc.); Diamond International; Eaton Corp.; General Highway Express; The Mead Corp.; Ohio Fast Freight; Owens Corning Fiberglas Corp.; Owens-Illinois; Planes Moving & Storage, Inc.; Pugh Motor Transportation, Inc.; Putnam Transfer & Storage Co.; Sentle Trucking Corp.; Sherwin-Williams Co.; Sun Express, Inc.; Van Dorn Co.; The Victor Transit Co.

Oklahoma.—The Chief Freight Lines Co.; Cities Service Oil Co.; Kerr Glass; Phillips Petroleum Co.

Oregon.—Georgia-Pacific Corp.

Pennsylvania.—Aluminum Company of America; Breman's Express; Brockway Glass Co.; Certain-Teed Corp.; Crown Cork & Seal Co.; Eazor Express, Inc.; Ellisco, Inc.; Koppers Co., Inc.; Milton Transportation, Inc.; PPG Industries, Inc.; Pennzoil Company; Pitt-Ohio Express, Inc.; Quaker State Oil Refinery Corp.; Rohm & Hass Co.; Scott Paper Co.; Story's Express; Sunmark Industries; Womeldorf, Inc.; Wheeling-Pittsburgh Steel Corp.

Tennessee.—Chattanooga Glass Co.

Texas.—Cambell Taggart, Inc.; Dr. Pepper Co.; Frito-Lay, Inc.; N.F.I., Inc.; Reeves Truck Leasing, Inc.; Temple-Eastex Inc.

Virginia.—Rubbermaid Commercial Products, Inc.

Washington, D.C.—Aluminum Association; Biscuit & Cracker Mfg. Association; Can Manufacturers Institute; Composite Can & Tube Institute; Latex Foam Rubber Council; Motor Vehicles Manufacturing Association; National Soft Drink Association; Private Trucking Council of America, Inc.; Truck-Trailer Manufacturers Association.

Washington.—Brader Hauling Service; Longview Fibre Co.

Wisconsin.—Adamo Transit; Barry Trucking; Container Transit, Inc.; J. I. Case; J. W. Cartage Co.; C. W. Transport, Inc.; Krier Preserving Co.; Miller Brewing Co.; Oscar Mayer & Co.; Pabst Brewing Co; Joseph Schlitz Brewing Co.; Schneider Transport Inc.; Wisconsin Paper & Pulp Manufacturers Traffic Association.

STATEMENT OF DONALD G. OREN, PRESIDENT, DART TRANSIT CO.

My name is Donald G. Oren and my business address is 2102 University Avenue, St. Paul, Minnesota 55114. I am President of Dart Transit Company, a motor common carrier, operating in interstate commerce pursuant to authority issued by the Interstate Commerce Commission and in Minnesota intrastate commerce pursuant to authority of the state regulatory agency.

Dart was founded by my father, Earl Oren, prior to federal regulation in 1935. After the enactment of the motor carrier provisions of the Interstate Commerce Act in that year, Dart operated for a number of years as a contract carrier and was ultimately converted to a common carrier pursuant to certain legislative amendments in 1958. My father testified before Congress regarding these legislative amendments, and I consider it an honor to be able to address the legislative proposals embodied in Senate Bill 1402.

Dart is still a privately held family business which employs 50 persons and has 400 owner-operators under long-term lease assisting in the conduct of its business. We are now authorized to carry any and all commodities except classes A & B explosives to and from any point in the United States.

Our headquarters are in St. Paul, Minnesota, and we also have facilities located at Chicago, Illinois and at Atlanta, Georgia.

Our gross revenues in 1980 were $33 million and, thus, we are not classified among the largest nor the smallest of motor carriers in the United States. Dart is essentially a business entity which has been able to grow from a single truck operation to a moderate size business as a result of the American capitalistic system.

Dart serves shippers throughout the United States. These shippers are of varying size, engaged in virtually every industry, and located in over 4,500 diverse communities. Recent data indicates we serve over 1,600 different shippers handling over 1,100 different commodities, and transport over 100,000 loads per year.

Historically, our embryo operations were geared to the food canning industry and as a result of that association we began to serve numerous manufacturers of containers.

In the early 1960's, a significant technological advancement in serving these shippers was experienced as a result of the development of trailer equipment referred to as "high cube vans". By structural modifications, the cube capacity of these trailers was increased in terms of width and height so that Dart and other carriers could offer shippers of light and bulky freight the advantages of greater loading capacity and still stay within the limits of state legislation regarding the size and weight of motor vehicle.

As a result of Dart's acquiring high cube trailers, it rapidly became a specialist in serving shippers of light and bulky freight.

The advantages of high cube trailers were extended by increasing the length of such equipment as various state legislative bodies sagely saw that longer trailer equipment could be operated safely and with advantage to their citizens.

Dart, as a progressive company, kept abreast of such developments and expanded the length of its trailer equipment from the standard 40 feet to 43 feet, then to 45 feet and finally to 48 feet. As of this date, we operate the following trailer equipment:

Length dimension	*Number*
40 to 43 feet	320
45 feet	293
48 feet	260

Our ability to secure and operate the efficient and economical high cube trailers as described above has allowed us to remain competitive with numerous other motor carriers and private carriers which operate similar equipment.

The use of such equipment has also allowed us to secure additional operating authority from the Interstate Commerce Commission which recognized the advantages and value of such equipment in cases such as *Dieckbrader Express, Inc. Extension-Massillon, Ohio* 103 M.C.C. 540 and *Hinchcliff Motor Service, Extension-Bremer, Inc.*,

107 M.C.C. 662.

Dart, as a result of its experience with such equipment, supports the philosophy underlying Senate Bill 1402, as it has found that the lack of uniform standards has inhibited its complete use of the most economical and efficient trailer equipment in its operations.

The ability of Dart to use the most economical and efficient trailer equipment has been hampered by the divierse and often confining laws of the various states.

For example, we can operate our 48-foot trailer equipment from Minnesota to the West and portions of the Southwest, but are virtually precluded from doing so in other directions because of the barriers resulting from particular state limitations on the use of trailers exceeding 45 feet in length.

Many of the states which have caused this problem, such as Illinois, Indiana and Missouri, have recently enacted legislation which will help alleviate the problem, but there are still a minimal number of states which create barriers to the use of such equipment for all shippers and all localities.

The lack of a legislative standard has precluded us from standardizing the dimensions of our trailers. We are forced to purchase and operate trailers of varying dimensions and to segregate their use. Similarly, it makes long-range equipment purchase planning difficult as a carrier is never assured what length trailers will be lawful in the varied states.

Since our operations encompass the continental United States we must be in a position to serve shippers in or to all states and, consequently, have trailers of varying lengths available.

The nature of motor carrier operations is such that the equipment does not move to a central location where it can then be sent to the shipper for pickup according to length limitations. On the contrary, the equipment is constantly moving throughout our system and if a tractor-trailer unit unloads in Kansas, for example, it is then moved to the next most feasible point where a shipper has a load to tender.

If the load tendered by the shipper at the reloading point is destined to a particular state, or through a state, with 45-foot trailer limitations, and the vehicle Dart has available is one with a 48-foot trailer, Dart must refuse the load or move smaller equipment from another point, which is generally more distant. Thus, Dart is faced with a situation where both of its tractor-trailer units are unloaded more distant miles and wasting fuel resources in doing so.

Also, it is not uncommon for a shipper to call Dart to handle a specific load to a state which would allow it to operate a 48-foot trailer, but when our driver arrives at the plant location, the shipper has a load needing expedition and seeks to substitute it. We are not able to accomodate the shipper if the destination and transversal states do not allow 48-foot trailers to be utilized.

Similarly, where a shipper tenders us a considerable number of loads on a continuing basis we will spot or place trailers at the shipping facility to be loaded at shipper convenience. Generally, we will park trailers of varying length and unless there is close supervision on the part of the shipper, we frequently find trailers loaded with freight we are unable to deliver because of the state length laws. The product must then be unloaded and reloaded on a shorter trailer, if available.

Our dispatching system is forced to make educated guesses as to where to place equipment and utilize it so that it has maximum usage. Complicating the normal variables of shipper needs, loading time and so forth is the trailer length factor. A standard length law would alleviate the problem.

Although Dart heartily agrees that a legislative solution to the problem is necessary, it is concerned that Section 5 (a) of Senate Bill 1402 would result in 45 feet being the maximum length of trailers which could be operated.

As previously noted, Dart now operates a substantial number of trailers which are 48 feet in length and, because of the favorable experience Dart has had operating this equipment, it is anticipated that all new trailer equipment would invlove this length.

To preclude the use of 48-foot equipement would result in Dart and other carriers being forced to take a backward step in the efficiencies and economics of its operations.

The advantages of the longer equipment to shippers we serve can be seen by the following example. The most common beverage containers of a metal container manufacturer are shipped 21 layers high on pallet. The pallets are loaded two across the trailer. If a 45-foot trailer is utilized, 18 pallets, or a total of 147,042 containers, can be loaded on the vehicle. If a 48-foot trailer can be used, 20 pallets, or a total of 163,380 containers, can be loaded on the vehicle. The 3-foot difference accounts for an increase of 11 percent in the number of containers which can be loaded.

Thus, if a shipper is shipping a large number of containers to a specific account, which is usually the case, it would be possible to fill the order with less units, resulting in fuel savings, less trucks on the highways, and the ability to provide more service with the same equipment and personnel requirements.

For example, we have a daily movement for a munufacturer of containers at Shakopee, MN to Milwaukee, WI. This is a distance of approximately 332 miles. By use of the 48-foot trailers we are able to deliver the same number of containers by making 9 trips as opposed to 10 trips utilizing 45-foot trailers. Based on an average 4.7 miles per gallon, daily fuel savings of aproximately 70.6 gallons are experienced on this single movement.

The above type of situation is typical of many movements for container manufacturers.

We have found no disadvantages to the use of the longer trailers. We have found that our drivers can and have adapted to driving the more efficient trailers and are able to operate them safely.

Our experience in the use of such trailers from a safety standpoint can be seen by the following comparative study of reportable accidents during the years 1977 to date in 1981:

Year	Number of 40-foot to 45-foot trailers	Number of accidents	Number of 48-foot trailers	Number of accidents
1977	559	33	7	0
1978	690	20	7	0
1979	802	13	17	0
1980	757	21	117	0
1981 to date	753	5	260	0

The equipment is driven by various drivers at random and is used to handle miscellaneous freight to and from various points. The equipment operates over all types of highways and throughout the continental United States, except where state law precludes its use. The 48-foot trailers have been used in larger cities as well as small towns with equal success. As a consequence, we feel that the above figures can be used properly to reflect that trailers over 45 feet in length can be operated safely.

Further, such trailer equipment does not require the use of any special tractors. We utilize the same tractors whether a 45-or a 48-foot trailer is involved. Our drivers, except for one employe-driver, are owner-operators who select and purchase their own tractor equipment.

Some operate conventional tractors, i.e., those with the engine forward of the cab, and some operate a cabover tractor, i.e., where the cab is over the engine. We have not heard any of the drivers complain about driving room in one type vehicle versus the other, or about riding quality. Based on my experience in the industry for over 25 years and familiarity with tractor equipment, I do not believe there is any significant difference in the driver space of tractors which would affect driver comfort or safety.

Further, if we felt differently we would not be advocating the use of longer trailers. As a company utilizing almost all owner-operators, we must be assured that they can handle our loads with safe and comfortable equipment or we would lose them to competing carriers who use the smaller length trailers.

The fact that Dart has a low turnover of such owner-operators tends to indicate drivers are satisfied with the trailer equipment Dart operates and requires.

I should also like to dispel any thought that the 48-foot trailer equipment is only beneficial to shippers of light and bulky freight. This equipment can and is used to haul freight of all kinds, including heavier items such as canned goods, iron and steel articles, and building materials.

Every shipper is advantaged by such equipment since, in some instances, additional freight of the heavier nature can also be loaded on the trailer without exceeding the maximum weight limitation.

More important, however, is that the shippers have the use of our equipment for their freight. Frequently, for example, we will carry containers to a shipper who will then load the trailer with canned goods. This type of operation also eliminates empty mileage and fuel inefficiencies on our part.

Any efficiencies we experience is reflected in the rates we assess or in our ability to purchase additional or newer equipment to make our service more responsive to shippers.

Dart has seen the proposed revision of S. 1402 advanced by The National Industrial Traffic League and concurs in the proposal and feels the amendments are absolutely essential to allow Dart to operate efficiently and economically and maintain its competitive position in the transportation of light and bulky freight.

Dart heartily commends Senator Cannon for introducing S. 1402 and the Committee for studying and considering the subject matter of uniform vehicle standards and affording members of the public to present their viewpoints.

Dart is hopeful that S. 1402 will be enacted into legislation if the amendatory proposals of the NIT League are encompassed within any statute.

STATEMENT OF DANIEL C. BOLGER, CORPORATE DIRECTOR, DISTRIBUTION, ANCHOR HOCKING CORP.

I am Daniel C. Bolger, Corporate Director of Distribution for Anchor Hocking Corporation, a manufacturer of glassware, commercial and institutional chinaware, decorative and convenience hardware, glass containers and metal and plastic closures. All domestic transportation is within my responsibility.

Anchor Hocking Corporation relies primarily on commercial carriers, but we also operate in private carriage. However the transportation is provided, the goal is the same . . . practical, economical and safe transportation. Over the years, the combined ingenuity of our employees, carriers and equipment manufacturers has boosted transportation productivity for products with densities too low to use the weight capacity of trailers. Some examples include:

(a) Pallets replaced with slip sheets to reduce cube and weight;
(b) Product and packaging redesign to ship more per truckload;
(c) Trailers in wedge configuration with thin walls;
(d) Numerous equipment improvements to save fuel; and
(e) Improved driver motivation and training.

Some states have helped our objectives by adopting the federal recommendation for 65 foot motor vehicle combinations or 60 foot motor vehicle combinations without any restrictions on trailer length. Anchor Hocking Corporation supports adoption of minimum uniform national standards of 102 inch width, 65 foot doubles and 60 foot tractor semi trailer combinations without any restriction on the length of any cargo carrying unit. Where they are legal, our carriers are currently using 48 foot, 50 foot, and 55 foot trailers that are up to 22 percent more productive than 45 foot trailers.

This, of course, is of great significance as a receiver and shipper of products that fill the trailer cube rather than the weight capacity. Depending on the specific product, the weight could be as little as twenty thousand pounds or it could approach the full legal weight. Most of the time, however, we cube trailers out long before the maximum weight is reached. There are also administrative and material handling savings with the larger trailers.

In our own private fleet, we have been unable to find any significant difference in fuel usage when pulling a 40 foot or 45 foot trailer. Energy consumption also varies only slightly with payload so the same overall relative savings result at the fuel pump as the trailer size increases.

Relating the efficiency another way, a 50 foot trailer can haul the same amount in nine trips instead of ten trips with a 45 foot trailer. A 55 foot trailer can do the same job in eight trips.

The efficiency gain with the larger equipment results in lower transportation costs per unit of production which in turn is reflected in lower selling prices. Obviously, this reduces inflation and helps consumers. It would be against our national interest to preclude efficient larger trailers from the transportation network.

Regarding the other part of the combination, the tractor, I assure you that shippers are vitally interested in safety and driver comfort. There isn't any indication that trailers over 45 feet are less safe than shorter motor vehicle combinations. The cooperative interest in functional cab designs is being addressed in the study "SAE Occupant Dimensional Parameters" which is funded by MVMA, BMCS, NHTSA, Teamsters, Truck Management, Inc. and the Auto Transporters. Interior

design has improved over the past five years and will improve further as a result of industry initiatives.

I have reviewed the amendments proposed by the National Industrial Traffic League and support their recommendations to assure the energy and cost savings for all carriers, private and commercial, across the entire country. States may then permit larger motor vehicle combinations at their discretion, but with the balance achieving one minimum standard that will not impede the flow of interstate commerce.

To summarize, our nation needs minimum uniform standards for motor vehicle combinations witdth and length without restrictions on the length of the cargo unit. This will provide an opportunity for improved productivity and fuel conservation. Our nation's needs are too great to do otherwise.

Thank you for this opportunity to present views on this important Bill.

The CHAIRMAN. I am curious about your responses to the railroad argument that the 102-inch width would significantly reroute traffic from the trucks to the railroads.

Mr. OREN. Our company has served the smaller shippers in the out-of-the-way communities. I would say at least two-thirds of our business involves shipments either to or from communities that have inadequate or no rail service. The vast majority of rail business would not be subject to diversion. Also, much of our business is very time-sensitive, involving deliveries at a specific time, like every 45 minutes or every hour-and-a-half. We find generally the rails cannot meet those same delivery schedules.

The CHAIRMAN. Do any of the others of you want to comment on that?

Mr. TURNER. I cannot speak for NAM, but I can speak for Owens-Illionis, that ships in excess of 400,000 truckloads a year. In our opinion, the diversion of any would be slight. The majority of products that move are finished products and are not susceptible to current rail transportation, due to scheduling problems. Primarily, the scheduling with the railroads is the key issue.

Mr. BOLGER. Anchor Hocking Corp. services most all of America with their small shipments to small cities. For our consumer industrial division, we service, since only one-third of American communities are served by rail, we rely heavily on a trucking system that makes numerous stopoffs and peddler runs. We will run long haul to Salt Lake City and then we will make three more stops, ending up in Oregon. And then the trailer will be reloaded, coming eastbound.

We have not been able to use piggyback to service those small communities on an effective basis, with the exception of the Denver area, the Los Angeles area, and I have to say that the intrastate Florida is the only State where we have extensive rail piggyback service on short haul, and that is because the Florida east coast railway is very service-sensitive, and will give us the time deliveries in Miami from our operation in Jacksonville. Otherwise, the 80,000 loads that we ship from our container plants go more than 90 percent over the road track, in the short haul, 100 miles, 150 miles.

The CHAIRMAN. Very specifically, though, in answer to my question, the amount of traffic that you might divert that you now ship by rail, because you are limited by a 96-inch truck, would be very insignificant in terms of the rerouting, if you had 102-inch truck?

Mr. BOLGER. That's correct. There would be no business that I am aware of that we would take away from rail because of that change.

The CHAIRMAN. Bob.

Senator KASTEN. Mr. Oren, the coalition that you represent includes a number of people, I see, from Wisconsin, some of whom I have talked with back and forth about this. Are you concerned about the 45-foot limit?

Mr. OREN. That's right.

Senator KASTEN. Is there any overall limitation for the tractor-trailer combination which is acceptable to you and the groups you represent, let's say 60 or 65 feet?

Mr. OREN. One of the strengths of the trucking industry is its diversity and the ability to accommodate different kinds of shipments and customers that we have. Although one particular length might be suitable for one operation, it may be not suitable for another.

I have found that there is no particular length that would suit everybody. I can give examples of our particular operation and my familiarity with some other operations. But there is no magic length.

Senator KASTEN. Are you suggesting that you would oppose any length? In other words, at one point you would have to say, no, that does not make sense, if it just started going out in 5-foot increments?

Mr. OREN. We are in agreement with the 60-foot overall length provision, from the front bumper of the tractor to the rear bumper of the trailer, but we are opposed to any trailer length restriction. We want that to be not restricted.

Senator KASTEN. Thank you, Mr. Chairman.

The CHAIRMAN. Howard?

Senator CANNON. No questions.

The CHAIRMAN. I have no other questions. Thank you. We will next hear from Charles Brady, director of the highway department for AAA.

STATEMENT OF CHARLES BRADY, DIRECTOR, HIGHWAY DEPARTMENT, AMERICAN AUTOMOBILE ASSOCIATION, ACCOMPANIED BY GEORGE A. VIVERETTE, JR.

Mr. BRADY. We appreciate this opportunity to present our views on S. 1402, Uniform Motor Vehicle Standards Act of 1981. AAA opposes enactment at this time for three major reasons:

First, mandating increases in vehicle lengths and widths and requiring States to permit the operation of truck tractors towing more than one cargo trailer, commonly referred to as double bottoms, have important implications to safety and to the accelerated obsolescence of our existing highway facilities. AAA believes that such proposals generate unacceptable risks and unwarranted expense.

Second, consideration of the issue at this time is premature. Reports mandated in the Surface Transportation Assistance Act of 1978 concerning truck sizes and weights, highway cost allocation, including the appropriate share of highway costs occasioned by various classes of highway users, and the report from the U.S. Treasury on appropriate adjustments in highway user tax payments are due early in the second session of this Congress. All of these issues are interrelated. AAA believes that important policy

decisions on truck sizes and weights should not be considered in a piecemeal fashion prior to receipt of the reports which Congress specifically requested for the purpose of assisting it in the making of such policy decisions.

Third, any effort to achieve national uniformity by establishing Federal limits on truck sizes and weights should be directed at establishing maximum limits, rather than minimum limits, as is the approach in this bill. Maximum limits should be applicable to all federally aided road systems. States should continue to be permitted to set lower size and weight limits than those established by the Federal maximums where safety or road conditions warrant more restrictive limits. To seek to solve this problem of nonuniformity by designating Federal minimums which each State must allow, as this bill does, will but compound nonuniformity problems. It will generate continuing pressures for liberalizing minimums so as to attain the largest sizes and greatest weights permitted by any State or group of States.

As for safety considerations, a current but unpublished Federal Highway Administration study on the accident experience of large trucks indicates that the double bottom combination vehicle is less safe than the tractor-semi-trailer combination. AAA has been provided a copy of this report, marked as a final report and dated September 1980; however, the copy marked "final" was provided for review and comment. This study is still being subjected to analysis by the Federal Highway Administration, and has yet to be released.

A review of the charts and tables in this document reveals that doubles had a worse accident record than singles in almost every category examined in the study. More detailed information on the comparison of the difference in accident rates between single and double combination trucks as contained in this document is attached to this statement as appendix 1.

Section 3 of S. 1402 mandates that every State permit the operation of 102-inch-wide vehicles on the interstate system, and on other highways designated by the Secretary of Transportation having traffic lanes designed to a width of 12 feet or more. Note particularly, the lanes do not have to be 12 feet, just designed to be 12 feet. There are a number of instances, particularly in urban areas, where traffic lanes of 12 feet have been subsequently reduced to 11 feet, so as to add capacity or provide bicycle lanes or other features. Add to that the fact that there are thousands of bridges where the roadway width is narrowed to 11 feet or less on the bridge deck, and one has to conclude that the 102-inch width requirement will render much of our existing highway system obsolete.

The mandate of the 65-foot minimum length is designed to require all States to permit the operation of tractors semitrailer full trailer combinations, commonly referred to as doubles. Probably the most commonly used double in this country is known as the western double. What is little understood is that this type of vehicle, because it operates on five single axles, imposes 60 percent more axle loadings on the highway than the more commonly used tractor semitrailer of the same gross weight. Since highways are designed to accommodate a finite number of equivalent single axles

over a specific time period, any action that results in accelerated accumulation of equivalent single axles will reduce the number of years between required resurfacing or reconstruction. Given the present deteriorating condition of our highways and the serious financial dilemma of increasing highway costs and declining revenues, AAA believes that it would be unreasonable for Congress to impose still another burden on those States by mandating that they permit the operation of vehicle combinations which will contribute to premature pavement obsolescence.

Mr. Chairman, this concludes my statement. We would recommend that the committee take no action on the bill before it until such time as studies that are mentioned in this statement have been reported to the Congress.

The CHAIRMAN. Are you specifically opposed to the 102-inch width?

Mr. BRADY. It does cause problems, where the traffic lanes are less than 12 feet.

The CHAIRMAN. Why don't the 102-inch buses cause problems?

Mr. BRADY. There are very few 102-inch buses. If the 102-inch width is permitted for all commerical vehicles, you could conceivably have something in the neighborhood of 35½ million vehicles running aroun' at 102 inches wide. Probably there are not more than 100,000 to 200,000 of commercial buses at 102 inches.

The CHAIRMAN. Are you saying that those who are using the bridges will have a difficult time with the 102-inch width?

Mr. BRADY. For the most part, the 102-inch buses are transit buses. You do have a number of over-the-road buses, but not very many of them yet are 102 inches. The transit buses are moving at much lower speeds than you would have on the open highway.

The CHAIRMAN. If the Federal Government sets maximums rather than minimums, aren't we going to have the Iowan problem all over again, States having the smaller minimums and then the argument about interference with interstate commerce?

Mr. BRADY. Not necessarily. The Federal Government has set maximums on axle loadings, they have set maximums on gross weight loadings, they have set maximums on a bridge formula. This has been the procedure used, and it is necessary to design a highway to know just exactly what size of vehicle is going to run over it. If you know only the minimum size, then it is very difficult to design appropriate lane widths appropriate curvatures, appropriate thickness of the road to support these vehicles.

Maximum is the route to go. Minimums would do nothing about uniformity.

The CHAIRMAN. But if the Federal Government sets a minimum length—I will take that back. I see the point you are driving at. Let me skip that for the moment.

Do you think the trucks pay their fair share?

Mr. BRADY. Well, it depends upon what is a truck. We feel that the trucks that weigh over 26,000 pounds, the large vehicles, particularly the diesel-powered vehicles, are not now paying their fair share.

The CHAIRMAN. What is unique about the diesel-powered vehicles?

Mr. BRADY. They are primarily the class 7 and 8 vehicles, the heaviest vehicles on the road. They carry the heaviest loads, the heaviest axle weights.

The CHAIRMAN. It's not diesel vehicles; it's that they are the heavier vehicles?

Mr. BRADY. If that same weight vehicle was gasoline powered, its fuel consumption would be much higher than the diesel-powered vehicle of that weight, and therefore, it is conceivable that that vehicle might be paying its fair share because of the added fuel consumed.

The CHAIRMAN. Howard?

Senator CANNON. I am rather interested in your statement concerning the safety. I am sure you are familiar with *Kassel* v. *Consolidated Freightways,* and I am wondering how you explain the voluminous evidence from insurance agents indicating absolutely no increased safety problems with doubles, based on their day-to-day experience. And I am sure you are well aware of the fact that the first thing the insurance agencies do when they find a higher risk is have it rerated.

Mr. BRADY. I don't know what the insurance companies' ratings are on the semis and the doubles, or who owns the insurance companies you refer to—whether these are groups of trucking companies that have obtained the ownership of those insurance companies or not.

We do know, on the court case that you just mentioned, *Kassel's* court case, that this represented the experience of only one carrier. It had just a little bit over 100 million miles of travel, very low exposure. We feel that the data which has been put forth on this DOT unpublished study is so persuasive that we would like to see that study out and debated on the pros and cons of what they have found.

We felt we could not wait any longer, with the Senate, particularly, considering moving up to mandating doubles, with this information not yet released. We feel it is important to get it out on the table.

Senator CANNON. Let me read a few quotes to you. This is from the *Kassel* v. *Consolidated Freightways:*

> In *Raymond Motor Transportation, Inc.,* v. *Rice,* the Court held that a Wisconsin statute that precluded the use of 65-foot doubles violated the commerce clause. This case is *Raymond* revisited. Here, as in *Raymond,* the State failed to present any persuasive evidence that 65-foot doubles are less safe than 55-foot singles. Moreover, Iowa's law is now out of step with the laws of all other Midwestern and Western States.

And then another:

> Iowa made a more serious effort to support the safety rationale of its law than did Wisconsin in *Raymond,* but its effort was no more persuasive. As noted above, the District Court found that the "evidence clearly establishes that the trim is as safe as the semi." The record supports this finding.

And also, if I can give you a statement from some of the insurance testimony appearing in the appendix of *Kassel.*

This is one of the statements:

> Our company is a large, independent filer of rates and rating formulas. In these independent filed rates, we rely on our filing most strongly on our own experience. We make no distinction whatever in rating our power vehicles for liability as to tractors with one or with two trailers. We make no distinction under our ratings for

tractor-trailer units for width, weight, or length—John Sullivan, regional commercial manager, Truck Underwriters Association and Truck Insurance Exchange, Kansas City, Kan.

Mr. BRADY. It is difficult to address the comments of the insurance carrier. Apparently he does not care what the size of the vehicle is—the length or whatever. Apparently it makes no difference on the insurance.

The other issue that you addressed—of the Wisconsin situation and the Iowa situation—is addressed by the Supreme Court. You have to take a look at what they were measuring here. In the State of Wisconsin—doubles were permitted in the State of Wisconsin, local doubles. In the State of Iowa, doubles, 60's, were permitted. So, you have the configuration of the vehicle. Whether there is any safety difference in the double 60's or double 65's, we do not know. But we do know from the other data that there is a difference between tractor semis and the doubles—whether they are double 65's or double 60's.

I did include several other studies in our text which you have before you, which show doubles do have problems—and serious problems.

Senator CANNON. Let me give you a couple of more statements. I gave you one from the Truck Underwriters Association and Truck Insurance Exchange, Kansas City, Kan.

This is one from Des Moines, Iowa:

As a loss prevention specialist, I wish to comment on the relative safety of twin trailer truck combinations. Our company's statistics show that the safety record of twin trailers is even better than that of conventional equipment—James B. Spice, vice president, loss prevention, Carriers Insurance Co., Des Moines, Iowa.

Let me give you one from Texas:

During the last 5½ years, we have carefully watched the operation of twin trailers. At no time during this period have we seen the slightest indication that the operation of twin trailers created any additional safety hazards as compared to the operation, than they have with their conventional 40-foot trailer combinations. The fleets that we insure have consistently reflected lower accident frequencies with their twin trailer operation than they have with their conventional equipment—R. G. Begeman, vice president, Transport Insurance Co., Dallas, Tex.

I could go on and on. There are lots of others. The insurance companies unanimously disagree with your conclusion there, at least all of them that I have seen.

Mr. BRADY. These are not our conclusions, Senator. They are what is in the study. They are what are in other studies. We do not operate doubles and we do not insure doubles.

The CHAIRMAN. Larry, do you have any questions of this panel?

Senator PRESSLER. No.

The CHAIRMAN. Howard, any more?

Senator CANNON. No.

[The statement follows:]

STATEMENT OF CHARLES N. BRADY, DIRECTOR, HIGHWAY DEPARTMENT, AMERICAN AUTOMOBILE ASSOCIATION

Mr. Chairman, I am Charles N. Brady, Director of the Highway Department of the American Automobile Association. I am accompanied by George A. Viverette, Jr., Assistant Director of the department.

The American Automobile Association is a federation of motor clubs serving 21.8 million members. AAA was founded in 1902. The very first purpose mentioned in its articles of incorporation is "To aid in the establishment and maintenance of a

uniform and stable system of laws relating to the regulation and use of automobiles and motor vehicles, and the rights and privileges of the owners and users thereof."

So AAA is no newcomer to the problems of achieving uniformity in motor vehicle laws and regulations. We appreciate this opportunity to present our views on S. 1402, "The Uniform Motor Vehicle Standards Act of 1981."

AAA opposes enactment of S. 1402 at this time for three major reasons.

First: Mandating increases in vehicle widths and lengths and requiring states to permit the operation of truck tractors towing more than one cargo trailer, commonly referred to as double bottoms, have important implications to safety and to accelerated absolescence of our existing highway facilities, AAA believes such proposals generate unacceptable risks and unwarranted expense.

Second: Consideration of the issue at this time is premature. Reports mandated in the Surface Transportation Act of 1978 concerning truck sizes and weights; highway cost allocation, including the appropriate share of highway costs occasioned by various classes of highway users; and the report from the U.S. Treasury on appropriate adjustments in highway user tax payments are due early in the second session of this Congress. All of these issues are interrelated. AAA believes that important policy decisions on truck sizes and weights should not be considered in a piecemeal fashion prior to receipt of the reports which Congress specifically requested for the purpose of assisting it in the making of such policy decisions.

Third: Any effort to achieve national uniformity by establishing federal limits on truck sizes and weights should be directed at establishing maximum limits rather than minimum limits as is the approach in this bill. Maximum limits should be applicable to all federally-aided road systems. S. 1402 establishes limits on the higher classes of roads, with exceptions permitted for use on other roads. States should continue to be permitted to set lower size and weight limits than those established by federal maximums, where safety or road conditions warrant more restrictive limits. To seek to solve this problem of nonuniformity by designating federal minimums which each state must allow, as this bill does, will but exacerbate nonuniformity problems. It will generate continuing pressures for liberizing minimums so as to attain the largest sizes and greatest weights permitted by any state, or group of states.

SAFETY CONSIDERATIONS

Section 4 of S. 1402 prohibits states from establishing or enforcing length limits of less than 60′ for tractor-semitrailers or less than 65′ for other combinations on any segment of the Interstate System or other federal-aid highways designated by the Secretary of Transportation.

AAA believes that such requirements imposed on states can have serious safety consequences. A current but as yet unpublished Federal Highway Administration study on the accident experience of large trucks indicates that the double bottom combination vehicle is less safe than the tractor-semitrailer combination.

AAA has been provided a copy of this report marked as a "Final Report" and dated September 1980. However, the copy marked "Final" was provided for review and comment. Now, a year later, the report has yet to be released.

According to the data in our copy of tne report, the accident experience of doubles is consistently worse than that reported for singles combinations. Even on a ton-mile basis, where doubles would be expected to perform better than singles, the accident rate for doubles was twice that of the singles on rural freeways, such as our Interstate system. On rural nonfreeways, typical of much of our federal-aid Primary, the rate of doubles was four times that of the singles. A review of the charts and tables in this document reveals that doubles had a worse accident record than singles in just about every category examined in the study. More detailed information on the comparison of the difference in accident rates between single and double combination trucks as contained in this document is attached to this statement as Appendix I.

Another study released by the Federal Highway Administration in March 1978, titled "Comparison of California Accident Rates for Single and Double Tractor Trailer Combination Trucks," reveals that the fatality rate per 100 million vehicle miles of travel was 40 percent worse for the doubles combinations than for singles. It notes that doubles had a "significantly" higher rate in "fatalities from all truck collisions; fatalities from truck-car collisions; car occupant fatalities from truck-car collisions; and severe and visible injuries from truck-car collisions."

Studies by the Michigan Department of State Highway and Transportation as well as the Ontario Ministry of Transportation and Communications add further evidence of the serious safety problems associated with the operations of large trucks generally, and doubles combinations in particular. The Michigan study found that the fatality rate for tractor-semitrailers and doubles combinations was three

times the fatality rate for all types of vehicles in 1975 and that doubles combinations overturned 2½ times more frequently. The Ontario study of 1974 accidents revealed that doubles combinations were involved in 2½ times more fatal crashes, 1½ times more fatalities per crash, and 2.4 times more property damage than found in tractor-semitrailer accidents.

Surely the findings of these studies raise questions concerning the potentially serious safety consequences of mandating that states be required to permit these vehicles not only on the Interstate system and designated Primary, as contained in Section 4, but also on other roads providing access to the Primary and the Interstates, as required in Section 5.

HIGHWAY OBSOLESCENCE

Section 3 of S. 1402 mandates that every state permit the operation of 102" wide vehicles on the Interstate system, and on other highways designated by the Secretary of Transportation, having traffic lanes designed to a width of 12' or more. Note particularly that the lanes do not have to be 12', just designed to be 12'. Nothing is said about bridges which are an integral part of our highway system. There are a number of instances, particularly in urban areas, where traffic lanes of 12' have been subsequently reduced to 11' so as to add capacity or provide bicycle lanes or other features. Add to that the fact that there are thousands of bridges where the roadway width is narrowed to 11' traffic lanes or less on the bridge deck and one has to conclude that the 102" width requirement will render much of our existing highway system obsolete.

Section 4 of S. 1402 mandates that states permit the operation of tractor-semitrailers with an overall length of 60' and a minimum length of 65' for other combinations.

AAA believes that a tractor-semitrailer combination 60' long can present serious off-tracking problems at 90 degree street intersections as well as cloverleaf ramp loops at interchanges. According to information contained in House Document 354, 88th Congress, use of such long tractor-semitrailers on the 165' radius curves of such loops with the normal 16' wide pavement becomes marginal. In such cases the turning track width for a 96" wide vehicle is 14.5'. With a 102" wide vehicle, the turning track width would be 15'. The present tractor-semitrailer, 96" wide and 55' long can make this maneuver in an overall turning track width of only 10.4'. To offset the combined effect of adding some five feet to the length and six inches to the width of these combinations it will be necessary to either increase the width of pavement on turning loops and intersections by about five feet, an unlikely event, or accept a lower level of traffic service and potential safety risk of operation with narrower side clearances.

The mandate of a 65' minimum length for other combinations is designed to require all states to permit the operation of tractor-semitrailer full trailer combinations, commonly referred to as doubles. Probably the most commonly used double in this country is known as the Western double. This combination is composed of a tractor truck and two cargo trailers, each 27' long. Overall combination length is 65'. Operation of this equipment has proven advantageous in instances where, because of cargo density, the vehicle might be filled to its capacity or "cube out" before reaching the maximum gross weight permitted by law. What is little understood, however, is that this type of vehicle, because it operates on five single axles, imposes some 60 percent more equivalent single axle loadings (ESALS) on the highway than does the more commonly used tractor-semitrailer of the same gross weight. The latter operates on five axles, four of which are arranged in tandem. Since highways are designed to accommodate a finite number of ESALS over a specified time period, usually 20 years, any action which will result in an accelerated accumulation of ESALS will reduce the number of years between required resurfacings or reconstruction. If such maintenance is deferred then additional expense is incurred through the higher costs associated with vehicle operation over deteriorated surfaces, and much greater costs of complete reconstruction when conditions become intolerable. Given the present deterioration condition of our highways and the serious financial dilemma of increasing highway costs and declining revenues, AAA believes that it would be unreasonable for the Congress to impose still another burden on those states by mandating that they permit the operation of vehicle combinations which will contribute to premature pavement obsolescence.

CONCLUSIONS AND RECOMMENDATIONS

AAA concludes that provisions of S. 1402 will create serious potential safety problems. Similarly, the increase in the length of tractor-semitrailers and the man-

dating of minimum lengths conducive to the use of Western doubles will lead to early obsolescence of our existing highways. The necessity to increase the width of turning loops and intersections and the accelerated accumulation of equivalent single axle loads will add to the rehabilitation costs of such roads. Increased widths will affect passing side clearances on most bridges in the nation and will render thousands of additional bridges functionally obsolete.

AAA recommends that this committee take no action on proposals such as those contained in this legislation until the Congress receives, and provides an opportunity for public debate, the reports on truck sizes and weights mandated by Sec. 161 of the Surface Transportation Assistance Act of 1978 (Public Law 95-599); the highway cost allocation study, mandated by Sec. 506 of the same Act, due on January 15, 1982; and the report of the Treasury on highway user tax excises, mandated in Sec. 507 of that Act, due for report by April 15, 1982. Premature action in establishing new standards will prejudge the findings of these studies and waste millions of highway user tax dollars expended in an effort to provide the Congress with the technical information necessary to arrive at a rational policy decision.

Appendix I

COMPARISON OF THE DIFFERENCE IN ACCIDENT RATES BETWEEN SINGLE AND DOUBLE COMBINATION TRUCKS [1]

(Percent)

	Difference in rates between—	
	Singles	Doubles
Table 6—Accident rate by roadway type:		
Rural freeway		+67.5
Rural nonfreeway		+347.4
Urban freeway		+60.9
Urban nonfreeway		+78.2
Table 8—Accident rates by roadway type (in California and Nevada only):		
Rural freeway		+107.3
Rural nonfreeway		+372.7
Urban freeway		+81.3
Urban nonfreeway		+3.2
Table 9—Accident rates by gross vehicle weight:		
20 to 30 kips		+828.0
30 to 40 kips		+5.3
40 to 50 kips		+116.7
50 to kips	+3.4	
to 70 kips		+16.9
70 to 80 kips		+54.3
80 to 90 kips		+152.5
Table 11—Ton-mile accident rates by roadway type:		
Rural freeway		+100.0
Rural nonfreeway		+300.0
Urban freeway		
Urban nonfreeway		+16.7
Table 12—Injury-accident rates by roadway type:		
Rural freeway		+188.2
Rural nonfreeway		+515.4
Urban freeway	+7.7	
Urban nonfreeway		+11.5
Table 21—Accident rates by cargo area configuration:		
Fully enclosed		+96.0
Enclosed low-bed		+225.4
Tank		+289.3
Bulk commodity		+1.8
Platform		+186.0
Dump	+10.7	
Table 23—Accident rates by drivers age group:		
20 to 29		+164.4
30 to 39		+115.4
40 to 49		+127.8
50 to 59		+125.4
60-plus		+97.9

COMPARISON OF THE DIFFERENCE IN ACCIDENT RATES BETWEEN SINGLE AND DOUBLE COMBINATION TRUCKS [1]—Continued

(Percent)

	Difference in rates between—	
	Singles	Doubles
Table 24—Accident rates by driver experience:		
3 to 5 months		+456.5
6 to 12 months		+163.9
1 to 3 years		+224.4
3 to 5 years		+382.8
5 to 10 year		+104.3
10-plus years		+120.7
Table 25—Accident rates by driver rig experience:		
3 to 5 months		+276.5
6 to 12 months		+315.6
1 to 3 years		+206.6
3 to 5 years		+184.0
5 to 10 years		+133.3
10-plus years		+124.1

[1] Source: "The Effect of Truck Size and Weight on Accident Experience and Traffic Operations, Vol. III, Accident Experience of Large Trucks," an unpublished U.S. Department of Transportation study documenting all large truck accidents occurring on 78 roadway segments in 6 States for a 1½-year period in 1976–77.

The CHAIRMAN. Thank you for coming, Mr. Brady.

Next we will take Mr. John Clements, commissioner of the Department of Public Works and Highways, N.H., and vice president of the American Association of State Highway and Transportation Officials.

STATEMENT OF JOHN A. CLEMENTS, COMMISSIONER, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, NEW HAMPSHIRE, AND VICE PRESIDENT OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, ACCOMPANIED BY WILLIAM DRUHAN

Mr. CLEMENTS. As I'm sure your committee knows, AASHTO, so called, is the association of all of the secretaries of transportation or commissioners, that either operate the highway systems or a combination of all modes. And in most States, it represents all modes.

I have prepared testimony that has been presented to your committee this morning. I would like to just paraphrase a few points.

I would like to say at the outset, for Senator Cannon, I guess we have some good news and some bad news, Senator. The good news is that we might as well confess to a very gross error in our testimony, which was discovered by Mr. Druhan, who is with us this morning, I think well known to some of your committee staff. In the first part of our testimony, you will note that we refer to the fact that AASHTO policy—and I might say AASHTO policy requires the concurrence of two-thirds of the membership or two-thirds of the 50 States that are represented in our national association.

When this testimony was being prepared, they went to our AASHTO Green Book, which is a recommended policy on maximum dimensions, weights of vehicles to be operated over the States. The last revision was in 1974. But there was an amendment to the recommended policy approved last year, and the document

has not been reprinted. So, on the first page of our testimony—or, page 2 on the double space version—where we say, "AASHTO policy, in excess of 40 feet," should now read "45 feet." And it goes on to say, "in addition, the policy provides that no combination of truck, tractor, and semi trailer, including any load thereon, shall have an overall length, inclusive of front and rear bumpers, in excess" and that now reads "55," but it should be "60."

The record, to be correct, should show that AASHTO—the AASHTO policy committee, or two-thirds of the member States—adopted in May of 1980 the overall length of a trailer of 45 feet and the overall length of the rig at 60 feet. I guess that is the good news, Senator Cannon. It gets closer to what your bill says.

The bad news is that we, at this time, oppose your bill.

Senator CANNON. I'm going to ask you about that, too.

Mr. CLEMENTS. We have a couple of reasons for this. One is, as previous speakers have referred to, there are two very extensive studies commissioned by Congress—the truck size and weight study and the cost allocation study. Most of the organizations present at this hearing, and I am sure many others, have been contributors to those studies. The truck size and weight study is already out in draft form, and most of us are looking at it. There has been a lot of work on it, and I understand they are going to be issued concurrently, about the first of the year, in accordance with congressional mandates.

We really do feel that at this time, this bill, at the very least, ought to be delayed and considered at such time as that evidence is available, so that all the facts can be properly weighed.

Sitting here in this position, as vice president of AASHTO, I think I occupy the same position that you often do, in that we have an opinion in our local States, individually, and collectively as an organization, we have to represent and express the views of the majority of our organization.

If I had to prioritize, I think what most commissioners feel about the damage to highways, and some of the questions raised earlier by Senator Schmitt, in order of importance to the State:

No. 1 certainly has to be axel weight. Excessive axel weights basically are what is destroying the highway systems of the country.

No. 2, adherence to the bridge formula, the length of the bridge formula—or "violation" of the bridge formula perhaps is a better way to put it—is what is destroying the bridges of the country.

And then finally, overall length, as long as it is in excess of the bridge formula, is probably third on our priority list.

However, I think many of the States throughout the Midwest and in the West have reasons for opposing doubles. I think many of the States in the East oppose the overall extra length of doubles primarily because we are frightened about the fact that they are going to have to get off somewhere; and when we see report language or suggestions that they are going to be departing from the interstate and getting onto the primary system, we know that many of the congested urbanized areas of the country cannot tolerate that.

So, this is all a matter of degree. When we are talking about longer rigs on interstates only, the majority of States have already

moved up to that 60-foot overall length. But when we start talking about getting off on the primary system, we all have a great deal of difficulty with that.

The argument was raised by Senator Schmitt earlier—and I would like to address that—about the cubage and the overall width. You will see in our statement that a 102-inch width is AASHTO policy. The question was raised about if you have more cubage, won't you be carrying more loads? And there was testimony given by some of the trucking associations about the number of truck trips that would be reduced.

The CHAIRMAN. The testimony was that there would be less loads. Some of the trucks might be heavier, but they would be shipping fewer, they would be using fewer trucks.

Mr. CLEMENTS. Yes, and I understand that. But when we have testified before other congressional committees on the actual comparison of the 18,000 pound axel with passenger cars over the lighter load vehicles, it was shown that there is a hyperbolic curve that goes up very quickly. It is a matter of frequency, and it is a combination of frequency of weights on the axel, and the actual axel weight itself.

From an engineering point of view, that is what we are trying to advise you on. I think most of the commissioners are professional engineers in the States.

As the axel loading itself goes up, you really start to ride up that curve very quickly. So that to make an accurate comparison of the statements made earlier about supposing, by cubing out higher, everybody could now go to 80,000 pounds, whereas now, being restricted on cubing, a lot of trucks are running at 69,000 or 73,250, or whatever other loadings are—what does that really do to highway deterioration? To make an accurate engineering evaluation, you have to really consider what the ultimate loading and the frequency is.

To be very specific, there is no uniform paving formula throughout the country. I think there is a common misconception that when you build to an "interstate standard," every State builds to the same subbase, every State builds to the same pavement thickness, and what have you.

What actually happens is that there is an evaluation in every State, as to what is the expected loading over the 20-year life cycle of that pavement. In small rural States, like New Hampshire or Nevada or Idaho, there has been a tendency, because there has not been money available to complete the interstate system, to get more miles for the buck. There have been very conservative pavement thicknesses, so that they can complete the actual——

The CHAIRMAN. I have to ask you to draw your testimony down to a close. We are operating here under—I have read all of your testimony—we are under a 5-minute limit for presentations in chief. Go ahead and conclude.

Mr. CLEMENTS. I would complete the thought that the paving thicknesses, Senator, are really devised by each State, based on predicted loadings. In the State of New Hampshire, for example, we had predicted five-axle loadings of an average of 69,000 pounds. And by cubing out a little higher, we could go to 80,000 pounds.

That really changes the formula on the basis of how those interstate highways were initially paved.

As a result, I would key back to the completion of the cost allocation study, and weight size study because they have tried to address just that kind of thing.

At this point I would be willing to yield to questions unless, Bill, you can think of anything we have not covered.

The CHAIRMAN. I have one question. You have a 60-foot tractor trailer limitation, 45 feet on the trailer. How did you happen to come to the 15-foot tractor—I assume that's what you come to, if it's 45 feet on the trailer?

Mr. CLEMENTS. We divide the responsibility in New Hampshire, but the testimony, most of it, comes from our Division of Safety. Their argument goes something like this: We tend to be a mountainous State. It is felt that the heavier rigs, with the engines in the front, with a little greater length, provide for generally a more husky vehicle. I am sure that vehicle manufacturers who have already testified are more expert. But it is the common conception by State official agencies. It has generally been the case that the heavier vehicles are more able to take mountainous terrain. The small cab-overs are used on short, flat runs.

The CHAIRMAN. It is not a safety argument so much?

Mr. CLEMENTS. It is, in that they can maintain speed on grades. When you are on mountainous terrain, we think it is important, with the mix of traffic, that they are able to maintain speed on mountainous climbing. We feel the heavier rigs tend to be the so-called 15-foot long, straight jobs.

The CHAIRMAN. Howard?

Senator CANNON. Yes. I have one little question here for you.

Getting back to the *Kasse* v. *Consolidated Freightways*—I am kind of confused now. I have read this opinion of the Supreme Court. And in that opinion, Justice Powell states: "The dissent fails to point out, however, that AASHTO specifically recommends that States permit 65-foot doubles."

Is that an incorrect statement?

Mr. CLEMENTS. 60-foot overall length. I do not think we say doubles in the policy.

Senator CANNON. I will read you what the justice says. All I can do is go by that:

> The dissenting opinion also suggests that its conclusions are bolstered by the fact that the American Association of State Highway and Transportation Officials (AASHTO), recommends that States limit truck lengths. The dissent fails to point out, however, that AASHTO specifically recommends that States permit 65-foot doubles.

I am reading from Justice Powell's quote in the *Kassel* v. *Consolidated.* So, now you have really got me confused.

I am wondering: Do you recommend doubles or don't you recommend doubles? If you have a copy of the decision——

Mr. CLEMENTS. 1974 was 65 feet for other combinations.

Senator CANNON. What does that mean?

Mr. CLEMENTS. Other combinations, other than a State trailer truck, which would include doubles.

Senator CANNON. That has to mean a double.

Mr. CLEMENTS. Yes.

Senator CANNON. You told us here today that you don't approve that policy.

What is AASHTO's real position?

Mr. CLEMENTS. Our policy is as follows: No single semitrailer or trailer, including any load thereon, shall have an overall length, inclusive of the rear bumper, in excess of 45 feet; and no combination of truck, tractor, and semitrailer, including any load thereon, shall have an overall length, inclusive of the rear bumper, in excess of 60 feet.

Senator CANNON. Where do the other 5 feet go?

Mr. CLEMENTS. I believe that is the extent of the AASHTO policy.

Senator CANNON. Maybe you ought to check it and get it straightened out for the record, because your testimony here does not coincide with what the Supreme Court says.

Mr. CLEMENTS. I do not think that AASHTO has ever had a concurrence of two-thirds of the majority of the members on the doubles issue.

Senator CANNON. Here is the reference: Appendix 602 and 603. You might want to check that out.

The CHAIRMAN. I think it would be worth providing specifics for the record, because of the initial mistake in your testimony, about: AASHTO's policy on the 60 foot, your policy about length on trailers at 45 feet, and your positions on doubles and 65 feet—very specifically. So, if there is any confusion in any of our minds, we will get it clearly in the record.

Mr. CLEMENTS. I would leave a copy of our amendment that is current AAASHTO policy.[1]

The CHAIRMAN. Is the 65-foot policy or not?

Senator CANNON. He said 60. He was reading from something that says 60. And the Supreme Court refers to a quote that says 65.

The CHAIRMAN. He said something about 65 or any combination thereof up to 65 feet.

Mr. CLEMENTS. It's in there.

The CHAIRMAN. What's in there?

Mr. CLEMENTS. First of all, we say the trailer itself shall not exceed 45 feet on a semitrailer. Next we say on a single semitrailer rig, tractor and trailer, it shall not exceed 60 feet. Now that is as amended by our 1980 policy change. Next we say that no other combination of vehicles consisting of more than two units, except that one tractor trailer, semitrailer, may haul one complete trailer. No such combination of vehicles, including any load thereon, shall have an overall length inclusive of front to rear bumpers in excess of 65 feet. So I think the way to make the record absolutely clear is to leave you a copy of this and have that as part of the record.

Senator CANNON. I think it is clear now, but that is not what you said earlier. That is what was bothering me. Now your criticism of doubles goes to the question of highway damage and safety, yet two-thirds of the States allow doubles. Is there markedly more highway damage and poorer safety records in those States?

Mr. CLEMENTS. I think from the two-thirds of the States who have approved doubles would not approve them if they thought the

[1] The material referred to has been retained in the Committee files.

allegations were true. So I would say no, two-thirds of the States feel that this has not been the case.

Senator CANNON. How do you feel? How does your association feel. Do you think that those States are right?

Mr. CLEMENTS. I think our statement stands for the record. We ought to look at the cost allocation study, the truck size and weight study and see what the results are.

Can I give you my personal opinion for the record? I would rather not commit AAASHTO as a whole. We have some member States in AAASHTO that feel very strongly about this issue. We have some Mississippi Valley States that have very inferior sub-bases. They have, in effect, very soft sub-bases, and they have a very serious highway construction problem. Personally, in New Hampshire, what I say to our trucking industry is if we have to prioritize the problems, I realize you need a productivity increase. We all need productivity increases in these days of inflation. If I had to trade something off, I would much rather trade off doubles on a straight Interstate System, decoupled at an interchange, than I would to even think about increasing actual weights or changing the bridge formula.

Senator CANNON. Nobody has been making that suggestion.

Mr. CLEMENTS. I realize that.

Senator CANNON. You remind me of the old political saw, the fellow who comes along and says, "Some of my friends think that the 65-foot doubles are more safe, and some of my friends think that the 65-foot doubles are less safe, and I want you to know that I am for my friends."

The CHAIRMAN. Larry, any questions?

Senator PRESSLER. No.

The CHAIRMAN. I have no more. Howard, do you have any other questions that you want to pursue?

Senator CANNON. No.

The CHAIRMAN. I will not say informative exactly, but very interesting.

[The statement follows:]

STATEMENT OF JOHN A. CLEMENTS, COMMISSIONER, NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS AND VICE PRESIDENT, AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

Mr. Chairman, members of the Committee, on behalf of the American Association of State Highway and Transportation Officials, I am pleased to appear before you this morning to offer our views on the "Uniform Motor Vehicle Standards Act of 1981." This proposed legislation is intended to provide uniformity of motor vehicle size standards throughout the country. First, it would set a uniform vehicle width at 102 inches. Second, for the single tractor-trailer combination it would limit the overall length to 60 feet, no more than 45 feet of which could be the actual trailer itself. Third, it would prohibit states from barring trucks from Interstate highways where two units are connected to the tractor ("western doubles") and set a limit of 65 feet in overall length

AASHTO is opposed to the enactment of this bill. We do not oppose the 102 inch width provision, since that width is in accord with adopted AASHTO policy. However, we believe there are several issues and problems that should be resolved and clarified before the other provisions of the legislation are seriously considered by the Congress. With regard to truck lengths, AASHTO's recommended policy since 1974 has been among other things that "no single semitrailer or trailer, including any load thereon, shall have an overall length, inclusive of rear bumper, in excess of 45 feet." In addition, the policy provides that "no combination of truck-tractor and semitrailer, including any load thereon shall have an overall length, inclusive of front and rear bumpers, in excess of 60 feet." While there have been discussions

within AASHTO on these policies, we have not yet found sufficient reason or member department support to change them.

In introducing this bill, Senator Cannon stated that it "would greatly increase the efficiency of the motor carrier industry without jeopardizing safety." He further stated that previously truck size and weight legislation largely focused upon issues of highway damage and safety, but that "the issue of highway damage is not pertinent to this legislation because it does not affect truck weights in any way. The issue of truck safety is an issue, but one that I am convinced has been satisfactorily dealt with."

Contrary to these statements, AASHTO believes that an increase in truck sizes will also ultimately increase the total truck weights applied to our highways. The very purpose of increasing the size of a truck is to increase the payload, with the expectation of increasing the efficiency of the operation. Thus, it can be anticipated that under the bill a larger percentage of trucks will be able to carry the maximum permissible weight limit. Moreover, a number of states were "grandfathered" when the current weight limits were established permitting weight limits considerably in excess truck sizes were increased as proposed it could be expected that the gross weight carried would also exceed 80,000 pounds. These weight limits are substantially in excess of the design limits to which our Interstate highways were built, which in most instances was 73,280 pounds.

It is generally accepted by engineers that permitting weights in excess of 80,000 pounds, or even the 80,000 pound level, for large numbers of trucks will cause considerable damage to the highways and significantly accelerate their deterioration. This would thus place a new and unreasonable maintenance burden on the states, and will cause large sections of our highway system to become obsolete years before the expiration of their now planned life expectancy. The first of our Interstate highways are now more than 20 years old, and are moving near the end of their acceptable serviceability. Very soon, many miles of the Interstate system will approach a sharp decline toward failure, and indeed some Interstate sections have already reached this point. To accelerate road failure and the need for total reconstruction appears to be an unreasonable price to pay for an increase in truck sizes, particularly until such time that creation of an adequate Federal 4R program is assured.

Turning to another issue, permitting "western doubles" throughout the country in order to achieve uniformity does not appear to be acceptable from a traffic highway standpoint. Regulations prohibiting these vehicles in many states have not been imposed capriciously. They have been prohibited from operating in a number of eastern states because it was believed that the topography, congestion, and other factors of the area preclude their safe operation in everyday traffic. These states are not now aware of convincing evidence disproving their concerns, and adequate to warrant approval of these vehicles. Similarly, AASHTO is not aware of any sufficient evidence presented at the federal level to warrant changing the regulations of these states.

Comments by Senator Cannon regarding the relative similarity of safety records between truck tractor-semitrailer combinations and truck tractor and two trailing units are based on the evidence presented in the Supreme Court case involving the State of Iowa and a trucking company. It appears, however, that the relative safety of truck tractors with two trailing units is still being questioned. For example, we have been informed that the Department of Transportation conducted studies in California which showed that a truck tractor with two trailing units had a fatality rate of 40 percent worse than that of the tractor-semitrailer combination.

I would like to point out an inconsistency in S. 1402 with regard to Sections 3 and 4 with Section 5. In Sections 3 and 4 the wider and longer trucks would be permitted on "the National System of Interstate and Defense Highways, or any other qualifying Federal-aid highways as designated by the Secretary of Transportation." On the other hand, in Section 5 permitting reasonable access for food, fuel, repairs, and rest these vehicles are permitted on "the Interstate Highway System and the Federal-aid primary system and terminals and facilities." We are deeply concerned about and opposed to the widespread use of these larger trucks on the primary system. It should be noted that many of the primary system roads have lane widths of 10 or less feet, whereas it is recognized in Section 3 that these vehicles should be restricted to roads "with traffic lanes designated to be a width of 12 feet or more." Permitting these vehicles on the primary system can cause considerable difficulties in that terminals and facilities have been and will be constructed in areas where communities are not prepared to face the transportation problems caused by such construction.

Mr. Chairman, there is a matter not contained in the bill language before you that we also want to comment on. We are aware of a suggestion advanced by some

motor carriers which would amend Section 6 of the bill to create a National Intercity Truck Route Network, to be established by the Secretary and including interconnecting segments of the Interstate system and other highways of equivalent design. The proposal would also prevent the states, and thus presumably their local governments, from restricting reasonable access to this Network, and the creation and operation of terminals or break-up areas established to facilitate easy access to the Network.

We have been advised that a decision has been made not to advance the concept of such a Network as an amendment to this bill, and we applaud that decision. A Network of this kind would be a sharp departure from the present orderly planning of our nation's highway system, and should receive extensive study by the states before it is considered by the Congress. Further, the implications of the preemptions language on the land use regulatory powers of state and local government would raise serious issues which would also need to be reviewed and discussed. It is our hope that this concept will not be taken up by the Congress, and certainly not without first undertaking the kind of intensive review it should receive.

Finally, Mr. Chairman, as you are aware, the Surface Transportation Assistance Act of 1978 mandates in Section 161 that the Department of Transportation undertake a study and report to Congress on uniform maximum truck size and weights. This act also mandates a highway cost allocation study including alternative tax structures and their impact. It is our understanding that these reports will be submitted to the Congress on or about January 15, 1982, and we think it is inappropriate to consider legislation of the present magnitude until they are in hand and have been analyzed. Although these reports are separate and distinct, AASHTO believes there should be a correlation in the final analyses so as not to take a precipitous action which could have unintended effects. For the same reason AASHTO believes that any consideration for changing allowable truck sizes such as those proposed in S. 1402 should await the DOT report on this subject. The report is due within four months, and there appears to be no compelling reason for an immediate change.

Again, let me thank you for the opportunity to testify today. I would be glad to attempt to answer any questions you and the members of the Committee may have.

The CHAIRMAN. Next we will have a panel of Mr. C. H. Fields, William Morgan, Mrs Zella Barber, Thomas Browne. There was going to be on the panel Mr. Bill Schaffer. He could not arrive today. He has asked that I insert his testimony in the record in full. And it will be in the record in full. All of your statements will be in the record in full.

Senator PRESSLER [presiding]. Thank you, Mr. Chairman. Let me welcome this panel, and let me apologize for being late this morning. I go from one committee meeting to another and to the floor. But this is a very important topic. I particularly want to welcome Mrs. Zella Barber who is on this panel. We are glad to see you here. I am sorry that I missed you yesterday in the flurry of the day, but I wanted to especially say to the people present and the committee, that Mrs. Barber is one of our leading citizens. She is the chairman of the board and president of Barber Transportation Co., largest local service, regional common carrier in South Dakota. Barber Transportation was founded in 1948 by Mrs. Barber and her late husband. The family-owned-and-operated business has grown to serve 11 Midwestern States, covering a region from Minneapolis to Kansas City and from Denver to Chicago.

I am pleased that the committee will have the opportunity to benefit from Mrs. Barber's expertise, since she can share with the committee the important viewpoint of a locally controlled business, something we are losing in our society. Barber Transportation is free enterprise at its best, and we are proud to have such an articulate and knowledgeable spokesperson for the State trucking industry.

I wanted to add that, because I am very proud to have Mrs. Barber here. She is in touch with our office frequently, and we listen closely.

With that introduction, I will open it to the panel to make their statements, and I believe that we have the 5-minute rule, and I do not know in what order you want to speak. Perhaps we could have Mrs. Barber begin. In the interest of fairness, then you will go the way you are listed.

STATEMENTS OF C. H. FIELDS, ASSISTANT DIRECTOR, NATIONAL AFFAIRS DIVISION, AMERICAN FARM BUREAU; WILLIAM J. MORGAN, DIRECTOR OF TRAFFIC, FRITO-LAY, REPRESENTING PRIVATE TRUCK COUNCIL OF AMERICA; ZELLA S. BARBER, CHAIRMAN OF THE BOARD AND PRESIDENT, BARBER TRANSPORT CO.; AND THOMAS W. BROWNE, VICE PRESIDENT, UNITED PARCEL SERVICE

Mr. FIELDS. My name is C. H. Fields. I am assistant director of national affairs with the American Farm Bureau Federation. Also the Farm Bureau members are normally reluctant to advocate any transfer of power from State governments to the Federal Government, the issue of uniform truck weights, lengths, and widths, is an exception made for compelling reasons and after many years of frustrated efforts on our part to secure uniform standards through actions by individual State governments. Trucks constitute the most important mode of transportation for agriculture, livestock, produce, and production inputs. In these days of high production costs, other escalating costs due to inflation, the need to conserve energy, it is important that every reasonable step be taken to maximize the efficiency of truck transportation.

It is important not only to agricultural producers but carriers and consumers.

We are again hearing rumblings of widespread discontent among the independent or ICC-exempt truckers. That could lead to another strike action. The entire motor carrier industry is experiencing a difficult time of adjustment to economic conditions and to the new competitive forces engendered by the regulatory reform legislation enacted last year. The exempt carriers who transport the bulk of the agricultural produce and production supplies, face even greater problems, since the truck regulatory reform package adopted did not go nearly as far as advocated by most of their spokesmen or by the Farm Bureau.

I might say I wish that Senator Schmitt's amendment had been adopted, and we would like to see it again considered, of exempting the small communities entirely. He was here earlier, Senator Cannon, and mentioned—I don't know if you were here when he brought that up or not.

Also the new financial requirements in that act have been confusing and costly, particularly to farmers who own several million trucks themselves and to the exempt carriers who do not have the advantage of fleet rates on insurance, and we hope the committee at a later date will give further consideration to that problem area.

Now prompt action by the Congress in enacting S. 1402 could well give sufficient encouragement to the exempt truckers to refrain from any strike action. Any widespread disruption of truck

transportation service is a matter of vital concern to the agricultural community.

The time has come for the adoption of national minimum standards for truck lengths and widths in the interest of everyone concerned. We are convinced that the minimum standards set forth in this bill can be put into place without having any discernible adverse impact on the Interstate Highway System or other designated highways or highway safety, so long as the maximum weight limits are distributed as provided in the bridge formula.

We are pleased with the uniform minimum width of 102 proposed in section 3, since width restrictions in some States have affected the economic hauling of some agricultural commodities, such as baled hay. We see no need for the limitation of total length on any single unit of a tractor-trailer combination contained in section 4. We would oppose this provision, since livestock and other agricultural commodities are now being hauled in units longer than 45 feet. And in several of the States they have had to make an exception in the State laws to permit that. We would want to be able to continue such use and purchase replacement trailers.

The Farm Bureau is particularly pleased that section 4(b) expressly legalizes the use of twin trailers on the Interstate System or any other qualifying Federal aid highways designated by the Secretary The use of twin trailers provides for maximum efficiency and flexibility without adversely affecting safety on the highways in any significant way.

I appreciate the opportunity to present our views.

[The statement follows:]

STATEMENT OF C. H. FIELDS, ASSISTANT DIRECTOR, NATIONAL AFFAIRS DIVISION, THE AMERICAN FARM BUREAU FEDERATION

The American Farm Bureau is a federation of 49 member State Farm Bureaus, representing three million families who are members of 2,800 county Farm Bureaus and who produce every agricultural commodity produced on a commercial basis in this country. Each member family decides annually on a voluntary basis whether to join or renew its membership and to pay dues—the sole financial support of the organization.

Last January, the voting delegates of the member State Farm Bureaus adopted the following policy on uniform motor vehicle weights and dimensions:

"We will work for limitations on truck weights and dimensions on the Interstate Highway System aimed at no less than 80,000 pounds on gross weight and 65 feet on length. States with existing standards which exceed these limitations should be permitted to continue such standards. Standards also should provide for a reasonable distance for trucks to be loaded on and off the interstate system."

Although Farm Bureau members are normally reluctant to advocate any transfer of power from state governments to the federal government, the issue of uniform truck weights, lengths and widths is an exception—made for compelling reasons, and after many years of frustrated efforts on our part to secure uniform standards through actions by individual state governments.

Although we realize the jurisdiction of this Committee does not include truck weights, we would point out that every state except Illinois and Arkansas have adopted at least 80,000 maximum gross weight. In North Carolina and Virginia, the gross allowable weight is set at 79,800—which is close enough to the 80,000 for all practical purposes.

Information available to us indicates that 33 states and the District of Columbia have maximum allowable lengths under 65 feet, with allowable lengths in seven of those jurisdictions under 60 feet. A total of 17 states have already adopted allowable lengths of 65 feet or longer.

Trucks constitute the most important mode of transportation for agricultural livestock, produce and production supplies. In these days of high petroleum costs, other escalating costs due to inflation, and the need to conserve energy, it is important that every reasonable step be taken to maximize the efficiency of truck

transportation. This is important not only to agricultural producers, but to carriers and consumers.

We are again hearing rumblings of widespread discontent among the independent or ICC-exempt truckers that could lead to another strike action. The entire motor carrier industry is experiencing a difficult time of adjustment to economic conditions and to the new competitive forces engendered by the regulatory reform legislation enacted last year. The exempt carriers, who transport the bulk of agricultural produce and production supplies, face even greater problems since the truck regulatory reform package adopted did not go nearly as far as advocated by most of their spokesmen or by Farm Bureau. Also, the new financial requirements in that Act have been confusing and costly, particularly to farmers, who own several million trucks themselves, and to the exempt carriers who do not have the advantage of fleet rates on insurance. That is a subject we hope this Committee will address during 1982.

Prompt action by the Congress in enacting S. 1402 could well give sufficient encouragement to the exempt truckers to refrain from any strike action. Any widespread disruption of truck transportation service is a matter of vital concern to the agricultural community.

With the exception of one provision in the bill, we heartily endorse S. 1402 and urge this Committee and the Congress to move promptly to final enactment.

The time has come for the adoption of national minimum standards for truck lengths and widths in the interest of everyone concerned. We are convinced that the minimum standards set forth in this bill can be put into place without having any discernible adverse impact on the Interstate Highway System or other designated highways, or to highway safety, so long as the maximum weight limits are distributed as provided in the bridge formula. We are particularly pleased with the uniform minimum width of 102 inches proposed in Section 3, since width restrictions in some states have affected the economical hauling of some agricultural commodities, such as baled hay.

We see no need for the limitation of total length on any single unit of tractor-trailer combinations contained in Section 4. We would oppose this provision since livestock, and perhaps other agricultural commodities, are now being hauled in units longer than 45 feet. We would want to be able to continue such use and be able to purchase replacement trailers.

Farm Bureau is particularly pleased that Section 4(b) expressly legalizes the use of twin trailers on the Interstate System or any other qualifying federal-aid highways designated by the Secretary. The use of twin trailers provides for maximum efficiency and flexibility without adversely affecting safety on the highways in any significant way.

We commend Senator Cannon for introduction of this legislation and the Chairman of this Committee for giving this bill due consideration. If enacted, this bill would be very favorable to agriculture, to consumers, and to the trucking industry. We know of no one who will be adversely affected in any significant way.

We appreciate the opportunity to present Farm Bureau's views on this important legislation.

Senator PRESSLER. Thank you. Mr. Morgan.

Mr. MORGAN. My name is William J. Morgan. I am director of traffic for Frito-Lay Corp. of Dallas, Tex. I am representing the Private Truck Council of America, which is the largest and only independent organization representing nontransportation companies which operate trucks in the course of their own businesses, whether it be manufacturing, distribution, or whatever.

I am certainly glad that Chairman Packwood wanted us to summarize this morning, because on the way over here I lost my glasses and I would have a hard time trying to read all of the data in here.

First, I would like to commend Senator Cannon for introducing S. 1402. The basic thrust of this bill is good. We certainly need to have uniform Federal length and width limits that prevent States from frustrating national transportation and national energy policies on the interstate and Federal-aided highways. When the State does impose more restrictive limitations than those that are generally in effect in surrounding States, it causes severe inefficiencies.

I would like to touch basically on the fact that—of the approximately 1,800 members of our organization, about 50 percent of them would cube out prior to reaching the maximum gross weights which are currently permissible.

Now in the area of safety, I would give you my own company's safety records, because we do operate trucks-trailers longer than 45 feet. Of the total fleet, 34 percent of the trailers are longer than 45 feet, but they were involved over the last 3 years in only 22 percent of the total accidents we have had. Our accident frequency ratio has been three accidents per/million miles driven, which is well below the National Safety Council's statistics for intercity traffic operations.

In the area of productivity, you take a trailer that is 3 feet longer than the 45-foot trailer that is proposed in S. 1402, we would have a 7.16 percent increase in cube capacity, and our trailers average around 45,000 miles per year, based on the ratio of trailers to tractors, which means that we would have—if we were limited to 45 feet we would add about 1.2 million per year to our operations, which would consume some 200,000 gallons of additional fuel. Certainly not a very productive, in fact, a very counterproductive situation.

In addition, it would probably take somewhere on the order of in excess of $1 million in capital investment to make up for additional units to haul the same amount of product.

We sorely need to increase productivity in this country. The trucking industry as a whole, whether it be private carriers, for-hire carriers, exempt carriers, or whatever, inflationary aspects of labor, increased costs for the replacement units or additional units, the whole schmear of spectrum of costs associated with transportation have gone up in a greater rate than your normal inflation rate. And by removing the restriction on 45-foot trailers, but keeping in the 102-inch widths and the 65-foot twin trailers as proposed.

This is a step forward which I think would be in the best interest of the country.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF WILLIAM J. MORGAN, MEMBER OF BOARD OF DIRECTORS, PRIVATE TRUCK COUNCIL OF AMERICA, INC.

My name is William J. Morgan and I am Director of Traffic for Frito-Lay, Inc., Dallas, Texas.

I am a past president of the Private Truck Council of America and currently a member of its Board of Directors.

I am here today on behalf of the Private Truck Council of America, the only national independent organization representing non-transportation companies which operate trucks in the course of their own manufacturing, processing or other businesses.

Before I get into the basic part of my testimony, just a technical matter—we assume that by "commercial" motor vehicle in the preamble of S. 1402 you do mean private truck operators as well as for-hire carriers. We also suggest that the word "minimum" be inserted in the prologue of the bill and in sections 2(4) and (5). This is necessary to make it clear that states are not precluded from permitting vehicles which exceed the standard set forth in the bill. The bill does not now intend to restrict such state regulations but could be subject to misinterpretation without the word "minimum".

First, I want to commend Senator Cannon for introducing S. 1402. The Basic thrust of the bill is good. We sorely need uniform Federal length and width limits that prevent states from frustrating national transportation and energy policy on interstate movements over the Interstate and Federal aid highway systems. When a

state imposes more restrictive limitations than are generally in effect, it causes severe inefficiences. A motor carrier must either avoid them by using circuitous routes or to reload to other equipment at their borders—i.e., reload to less efficient equipment—or utilize equipment of such size as to be legal in the most restrictive jurisdiction.

To date, no evidence has been presented indicating that a multivehicle combination of 65 feet, or double bottoms, is more onerous, difficult to handle or unsafe than any other combination vehicle. The unencumbered use of these vehicles on interstate highways across the nation most certainly will be beneficial to commerce and fuel economy. An argument may be made that S. 1042 provides for doubles up to 65 feet which would provide the additional cube required. This would be good for terminal to terminal operations. However, this type equipment does not lend itself to "peddle" or stop-off deliveries as the units must be broken down and re-connected at each stop to partially load/unload, which is time consuming and counter-productive.

While on the subject of less efficient equipment, I want to refer to a provision of S. 1042, Section 4(a), the 45 foot trailer length limitation. We oppose this limitation and suggest that the length of a single trailer be not restricted provided the overall combination of tractor/semi-trailer not exceed the proposed 60 feet.

There are many members of the Private Truck Council who use trailers in excess of 45 feet.

There are many commodities such as food items and materials, prepackaged snack foods, empty cans, plastic containers, and styrofoam products which fill the cubic volume of the vehicle long before reaching the weight limit of the vehicle. The same is true for other low-density high-volume items such as a wide variety of consumer goods packaged in blister pack display units.

There is no evidence to indicate that trailers in excess of 45 feet (in most cases, we're talking about 48 foot trailers) are less safe. My own accident frequency rate, for example, is no greater with the longer trailers than with those 45 feet or less. Trailers longer than 45 feet comprise 34 percent of the total fleet; however, have been involved in only 22 percent of the total accidents over the past three years. This same private fleet has a 3-year average of 3.0 accidents per million miles which is well below the national average for similar private fleets as statistics for the National Safety Council indicate.

A 45 foot trailer limitation reduces productivity and is less fuel efficient. For example, taking the difference between a 45 foot and 48 foot trailer, the 48 foot unit has 7.17 percent cube. Using 45,000 miles per trailer per year—which is taken from one fleet's actual experience—this lower cube would increase mileage from 18 million miles per year to approximately 19.2 million miles per year. At 6 mpg on the power unit, it would take an additional 200 thousand gallons of fuel to deliver the same amount of goods. Further, the capital investment in additional equipment (12 tractors and 27 trailers) would exceed a million dollars. This is but an isolated example. There are a great number of private (and for-hire) fleets—large and small—with the need for trailer equipment in excess of 45 feet.

But it's our understanding that the real issue behind the 45 foot trailer restriction is interior cab dimensions and driver comfort and safety. I believe that the manufacturers can solve this problem without regulation.

Further, any determination now to limit trailer length as a solution to this problem is premature pending the outcome of the driver anthropometric study now underway under the auspices of the Teamsters Union, the Motor Vehicle Manufacturers Association, Trucking Management, Inc., the Bureau of Motor Carrier Safety and the National Highway Traffic Safety Administration.

This nation sorely needs to increase productivity. The trucking industry in particular is hard pressed by the rampant inflation that has been the rule for several years. Costs for equipment, labor, parts and fuel in the trucking industry have risen at a greater rate than the average costs as measured by the "cost of living" index. Trucks have finite dimensions, variously regulated by the states. S. 1402, by removing the 45 foot trailer limitation, would provide the basis to increase commercial motor vehicle productivity and help to offset these current inflationary costs which ultimately are passed on to the consumers of goods.

Senator, if I recall correctly, this is not the first time an otherwise reasonable and sound piece of legislation has had a trailer length limitation attached to it. I believe the fate of such legislation in the past was that it did not see final passage. I hope that is not the case this time because S. 1402 is otherwise a good bill and would do much to enhance the economic productivity of transportation in this Country.

Thank you very much.

Senator PRESSLER. Thank you, Mr. Morgan.

Next we will hear from Mrs. Zella Barber.

Mrs. BARBER. Mr. Chairman, members of the committee, I should thank the Senator for introducing my company and myself, and I will be repeating a very small portion of it. I am chairman of the board and president of Barber Transportation Co., a relatively motor common carrier of general freight commodities. Our corporate offices are located at Rapid City, S. Dak.

On behalf of our employees and shippers, I wish to commend Senator Cannon for introducing S. 1402, a bill to establish uniform national standards for deregulation of truck size on the interstate and other qualifying Federal aid highways.

Barber Transportation Co. supports the principles established in S. 1402 and subscribes to the position taken by the American Trucking Association on this important legislation.

Mr. Chairman, I have one suggestion which would advance the goals of the Cannon bill by promoting fuel efficiency, productivity and consumer savings in interstate freight service. That Congress should extend a program already underway in South Dakota, the operation of longer combination vehicles on a limited system of designated superhighways. Under a demonstration program called the long-run program, South Dakota now permits the operation of twin 45-foot trailer combinations on I-90, our east-west highway and on I-29, our north-south interstate. These combinations may run up to 129,000 pounds in gross rate under special permit, and they may stand up to 110 feet in overall length.

Barber Transportation has been operating twin 45's or turnpike doubles on South Dakota's interstates since June 1978. We have retrofitted 40 trailers with pintel hooks for a one-time cost of $18,000. We also purchased four tandem axle dollies at a cost of $20,000. Thus the one-time capital cost to adapt our existing equipment was only $38,000.

Let me tell you the results we have achieved. Barber Transportation made 7,197 trips with turnpike doubles from program startup until December 31, 1980. We hauled 625 million pounds of freight and traveled about 2.4 million. We saved over 436,000 gallons of diesel fuel and almost $1 million on an investment of only $38,000.

Our company grossed $18 million in 1980, so you can see the importance of the fuel savings to us and our customers. Mr. Chairman, we achieved an astonishing 41-percent fuel savings by using turnpike doubles instead of standard tractor-semitrailer combinations. Other operators in South Dakota had the same results. Although our productivity has gone up almost 100 percent for each turnpike double combination on the road, we have not laid off any employees because of our conversion to longer combinations. We have maintained an improved service to small communities, rather than cut service. In an area where population is only 1.1 persons per square mile, service to small communities is most important. Savings have been passed along to our shippers and the consuming public. Our costs, on the average, have been much lower than would be the case without turnpike doubles and rates have been kept down.

Mr. Chairman, what about safety on the highways, the most important question of all? We are convinced longer combination vehicles are safe as well as efficient. After 3 years of operations,

the participating carriers in the longrun program have had only one reportable accident under BMCS criteria. There had been no injuries and more than 4 million miles traveled. Because we saved nearly 3.7 million miles of South Dakota's interstates, we have reduced exposure to accident by nearly 50 percent.

Finally, Mr. Chairman, wear and tear on the highways is reduced when turnpike doubles are used. The overall rate is spread over more axles. The average axle loading is actually less than on the familiar 18-wheeler, but longer combination vehicles for all of these reasons are the most socially responsible commercial motor vehicles on the road today. We commend our South Dakota program to you, Mr. Chairman, and to the Nation.

Mr. Chairman, I request that a professional paper on the South Dakota experience prepared by Mr. Leonard Gidlow of my company be included in the hearing record immediately following these remarks. I also request that a white paper describing the benefits of uniform national standards for truck size and weight be included in the hearing record as well.

Thank you, sir.

[The material referred to follows:]

ENERGY CONSERVATION FOR MOTOR CARRIERS: THE CASE FOR TWIN 45-FOOT SEMITRAILERS—BY LEONARD D. GIDLOW, VICE PRESIDENT, BARBER TRANSPORTATION CO.

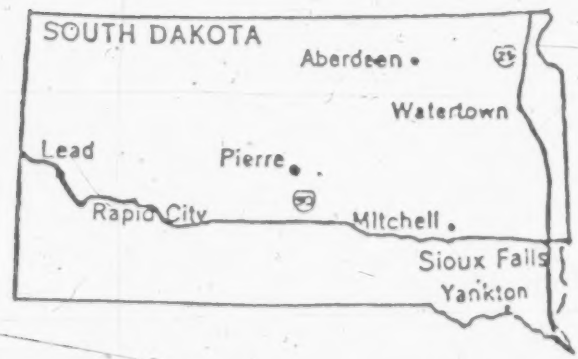
During the 1979 petroleum shortage, motor carriers, like automobile drivers, found their fuel supplies sharply reduced. In fact, many motor carriers found themselves receiving as little as 60 percent from their traditional diesel suppliers. However, one group of carriers operating in South Dakota found that they did not have to substantially alter their operations during the summer of 1979, even though they were receiving significantly less diesel fuel. These carriers were able to survive on less fuel because they were participants in a state-sponsored demonstration project which allowed them to haul twin 45-foot trailers, also known as Turnpike Doubles, with gross vehicle weights up to 129,000 pounds on South Dakota's two Interstate Highways. This paper describes the demonstration project, quantifies the fuel and operational savings, and calls for Turnpike Doubles and other such multitrailer vehicles to be used as effective energy conservation options.

THE LONG-RUN PROGRAM

On May 1, 1978, the South Dakota Department of Transportation (SDDOT) established a special one-year demonstration project to determine if significant amounts of fuel could be saved with longer, heavier trucks. The demonstration, officially known as the "Long-Run Program" allowed the use of multi-trailer combinations, such as Rocky Mountain Doubles which consists of a tractor, a 45-foot semitrailer and a 27-foot full trailer or a Turnpike Double which consists of a tractor, a 40 or 45-foot semitrailer, and a 40 or 45-foot semitrailer converted to a full trailer.[1]

These vehicles were only allowed on South Dakota's Interstate Highways: I-29, which runs north-south from Sioux Falls to Watertown in the eastern part of the state, and I-90, which runs east-west from Minnesota to Wyoming and connects the state's two largest cities of Sioux Falls and Rapid City (see Figure I).

FIGURE I



Trucks were restricted to the right-hand side of the Interstate except when passing. Finally, these longer vehicles were not allowed on any other highways, except for two miles off the Interstate for pickup and delivery or where pipeline interchanges required additional miles.

Under the program, motor carriers wishing to participate were issued special per-trip, per-load permits.[2] In addition, carriers had to file with SDDOT individual trip reports detailing miles traveled, fuel consumed, gross weights, trailer weights, and driver wages. Weekly and monthly summary reports were also required.

Nine carriers participated during the demonstration year. The biggest participant was Barber Transportation, an interstate regulated general commodities carrier which grossed $18 million in 1980. Also participating were two other interstate regulated general freight common carriers, one interstate regulated small parcel carrier, two petroleum carriers, one forest products carrier, and two special commodities carriers.

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[1] Turnpike twin trailers in excess of 65 feet overall length are currently allowed on designated roads in New York, Indiana, Massachusetts, Ohio, Florida, and Kansas.

[2] Under a 1929 South Dakota law, 3224-4, the SDDOT can issue single trip permits for divisible, oversize loads. Since the law was in effect prior to the 1956 Federal-Aid Highway Act, single trip permits in excess of the 1956 federal limits (and the increased 1974 limits) are legal under the so-called "grandfather clause," Subsection 108 (j), now Title 23, Section 127, United States Code. See South Dakota Attorney General Mark B. Meirhenry's Memorandum Opinion No. 79-2 of January 28, 1979.

To participate, these carriers had to pay additional fees of $40 per ton for loads over 80,000 pounds and were issued a special license plate. In addition to the special license fees, carriers had additional costs of installing a pintle hook at the back of the first trailer for about $450–500 apiece plus buying a "dolly" which converts the semitrailer to a full trailer. Tandem axle dollies cost about $5,000–6,000.

With the exception of the hilly terrain around the Black Hills in the west, most of South Dakota is flat prairie land. As a result, the carriers could use their present tractors to haul the twin 45's without substantial reductions in highway speeds.

SIZE AND WEIGHT LIMITS

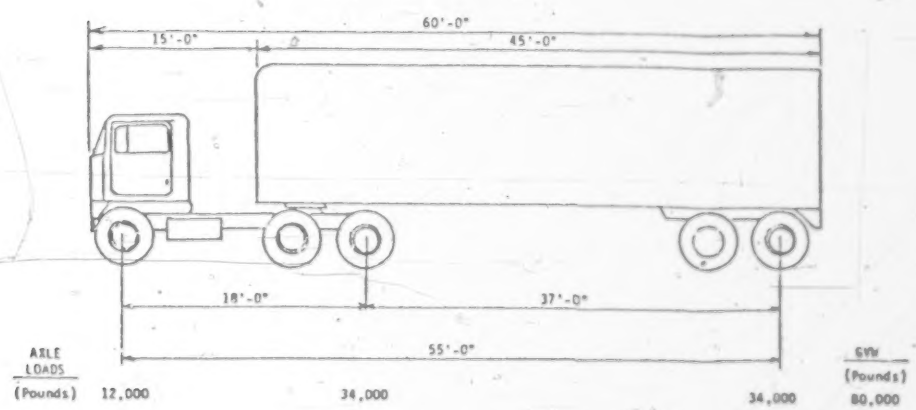
It is important to realize that the "Long-Run Program" did not allow overweight or overloaded trucks. The gross vehicle weights did exceed the federal permissible standard of 80,000 pounds gross vehicle weight established in the Federal-Aid Highway Amendments of 1974. However, the single and tandem axle limits and vehicle length limits were based upon the Federal Weight Law Formula, also known as Bridge Table B. This table is based upon the following engineering concept:

$$W = 500\,(LN/N-1 + 12\,N + 36).$$

Where
- W = Maximum weight in pounds carried on any group of two or more axles computed to nearest 500 pounds.
- L = Distance in feet between the extremes of any group of two or more consecutive axles.
- N = Number of axles in group under consideration.

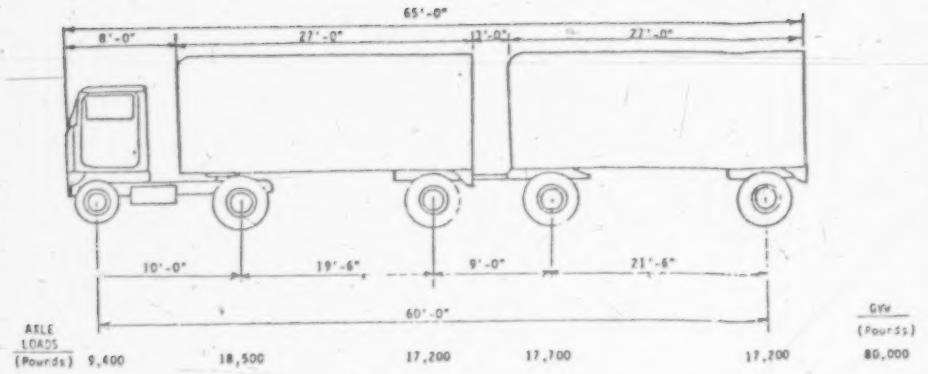
Thus, a typical 60-foot tractor semitrailer can have a gross vehicle weight of 80,000 pounds (see Figure II), although realistically only 10,000 pounds can be loaded on the front axle, for a gross vehicle weight of 78,000 pounds.

FIGURE II



Also, a 65-foot combination with two 27-foot trailers can reach the maximum 85,000 pounds, although the current permissible maximum limit is 80,000 pounds. (See Figure III).

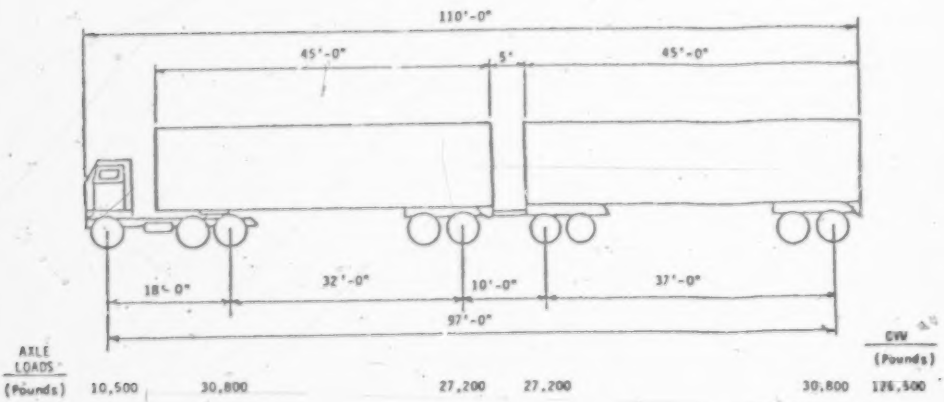
FIGURE III



WESTERN DOUBLES

The Long-Run Program limited vehicle combinations to 110 feet and 126,500 pounds gross vehicle weight. Figure IV illustrates the arrangement of axle weights.

FIGURE IV



TURNPIKE DOUBLES

When comparing Figures II and IV, notice that the Turnpike Doubles carry proportionately less weight per axle or axle combinations than that allowed for the typical tractor semitrailer. With an average load per tandem axle of 29,500 pounds, 45-foot Turnpike Doubles average 4,500 pounds less than the 18-wheeler tractor semitrailer.

Finally, the South Dakota Department of Safety's Highway Patrol vigorously monitored the participating motor carriers to assure proper axle and gross weight loading to meet axle and bridge formula restrictions.

RESULTS

Table I presents the results of the demonstration project. During the first year of the project, nine motor carriers made 4,359 trips hauling 395 million pounds gross weight over 1.3 million miles. If each trailer were pulled by a tractor, the mileage

would have been 2.5 million miles. Viewed another way, South Dakota had 4,359 fewer tractors on its Interstates.

Of course, the reduced mileage meant significant fuel savings. During the test period, the 2-trailer per tractor units used 320,000 gallons of diesel fuel. Pulling each trailer by a separate tractor would have used an additional 228,000 gallons. Thus the program produced an astonishing 41 percent energy savings.

For Barber Transportation, the program's biggest user, the results were equally impressive. Barber completed 2,193 trips over 700,000 miles with 201,358 gallons of diesel fuel, thus, saving 137,000 gallons of diesel fuel. (See Table I). Barber retrofitted 40 trailers with pintle hooks for a one-time cost of $18,000. In addition, Barber purchased four tandem axle dollies at a cost of $20,000. The majority of Barber's freight is low density, light and bulky traffic. Therefore, it was able to use its existing single axle dollies, normally used in its twin 27-foot operations, and still stay within the prescribed axle limits. As a result, for a total one-time cost of $38,000, Barber was able to save $241,579 in one year.

TABLE I—SUMMARY OF SAVINGS, MAY 1, 1978 TO APR. 30, 1979

	Total	Barber transportation
Number of trips	4,359	2,193
Gross weight pounds	395,340,260	192,062,868
Miles traveled	1,275,639	745,952
Miles projected [1]	2,466,350	1,482,468
Miles saved	1,190,711	736,516
Diesel fuel used (in gallons)	320,275	201,358
Diesel fuel saved (in gallons)	228,395	137,261
Dollars saved	$419,514	$241,579

[1] Miles projected is the number of miles it would take to haul the same load with conventional equipment.

Reduced highway mileage also resulted in a better safety record. During the demonstration, there were four accidents, with only one resulting in a citation, and no injuries. None of the accidents qualified as a reportable accident under Bureau of Motor Carrier Safety criteria. Thus, the reportable accident rate was 0.00 accidents per million vehicle miles. This compares favorably with the safe operation of the more typical twin 27-foot trailer combinations which are operated in 33 states. According to the Bureau of Motor Carrier Safety, twin 27-foot combinations have an accident record of 0.76.[3] All intercity common carrier trucks have a safety record of 3.05 accidents per million vehicle miles.[4]

CONCLUSIONS

South Dakota's Long-Run Program demonstrated that a very significant amount of diesel fuel was saved with the use of multi-trailer combinations. For states with vast expanses of land or adequate Interstates or Turnpikes, allowing twin 45-foot combinations during an energy emergency can save significant amounts of diesel fuel.

In addition, the continuation of some motor carrier operations during an energy emergency were made possible with this program. For example, during the energy shortage in the summer of 1979, Barber Transportation received about 65 percent of the fuel it had purchased in 1978 from its traditional suppliers. Yet, Barber continued to operate on these low allocation levels because of the Long-Run Program and the use of twin 45-foot combinations.

Given these impressive savings, the participants in the Long-Run Program were surprised by the absense of any recommendation for longer, heavier trucks in the Department of Energy's (DOE) proposed Standby Federal Emergency Energy Conservation Plan.[5] The only steps proposed by DOE which directly affected the trucking industry were further reduced highway speeds and restricted use of trucks on certain days of the week.[6]

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[3] "Safety Comparison of Doubles VS. Tractor Semitrailer Operations" Bureau of Motor Carrier Safety, 1974. Based on data submitted by seven Western carriers.

[4] "Fleet Accident Rates," National Safety Council, 1980.

[5] Federal Register, February 7, 1980, page 8462 +.

[6] On February 23, 1981, following the oil decontrol, DOE withdrew most of the proposed rules including the speed and vehicle use sticker measures. See Federal Register, No. 46, page 13517 +.

Conspicuous by its absence was the minimal requirement to raise size and weight limits to 80,000 pounds and/or allow twin 27-foot combinations. For example, during the diesel shortage in the summer of 1979, Iowa, Maryland, Mississippi, Missouri, Connecticut, Virginia, and the District of Columbia increased their gross weights from 73,280 pounds to 80,000 pounds. In addition, Iowa and Connecticut also changed their size limits to allow twin 27-foot trailers.

EPILOG

The Long-Run Program was originally a one-year demonstration project and was scheduled to end on April 30, 1979. However, because of the obvious savings from the program, authorization was given to continue it indefinitely. As of December 31, 1980, the program had saved over 684,704 gallons of diesel fuel. (See Table II). Barber Transportation saved over 436,000 gallons of diesel fuel and almost one million dollars on an investment of $38,000. There were no accidents in 1980.

TABLE II.—SUMMARY OF SAVINGS, MAY 1, 1978 TO DEC. 31, 1980

	Total	Barber Transportation
Number of trips	12,743	7,197
Gross weight (pounds)	1,089,504,242,	625,308,872
Miles traveled	4,014,940	2,382,850
Miles projected	7,714,150	4,754,455
Miles saved	3,699,210	2,371,605
Diesel fuel saved (in gallons)	1,047,512	675,276
Diesel fuel saved	684,704	436,069
Dollars saved	$1,475,959	$939,983

Whether the program continues depends upon whether the South Dakota Supreme Court upholds a Circuit Court decision which affirmed South Dakota's authority to issue single trip permits in excess of 80,000 pounds gross vehicle weight. On September 1, 1979, the Federal Highway Administration (FHWA) of the U.S. Department of Transportation threatened to withhold $17 million in Interstate federal funds to South Dakota if the program were continued. Following the FHWA announcement, the participating motor carriers and the South Dakota Trucking Association took the SDDOT to the State Circuit Court. The Circuit Court ruled that SDDOT did have the authority to issue the special permits. SDDOT then submitted the Circuit Court's opinion to the FHWA in an effort to convince them that the federal funding should continue. FHWA advised SDDOT that the Circuit Court's opinion was not sufficient and that SDDOT would have to have a South Dakota Supreme Court ruling. SDDOT then took the case to the State Supreme Court. Arguments were heard on March 18, 1981.

Truck Weights and Sizes: The Case for National Standards

BACKGROUND AND PURPOSE

The February 1979 the National Academy of Sciences' Transportation Research Board reported that nonuniformity in state laws relating to truck weights and sizes costs the American public from $1.6 billion to $2.8 billion annually; wastes between 400 million and 875 million gallons of fuel annually; and causes an avoidable increase in noise and air pollution.[1]

Over the years state transportation officials have recognized these problems. Inconsistent state regulation of truck sizes and weights has caused inefficiency and congestion on the highways—increased freight handling and more truck movements have been required. Despite the fact that interstate motor carriage serves every community directly or indirectly, and more than 39,000 points receive only truck service, the diversity among state laws governing sizes and weights on the Interstate System has not been eliminated.

The U.S. Department of Transportation has acknowledged that uniformity in weights and sizes is the key to productivity gains in the motor carrier industry in

[1] National Cooperative Highway Research Report 198, "State Laws and Regulations on Truck Size and Weight," Transportation Research Board, National Research Council, National Academy of Sciences, Washington, D.C. (February 1979), p. 1.

the 1980's.[2] If truckers are to succeed in conserving fuel and fighting inflation, the irrational patchwork of conflicting weight and size regulations must be eliminated.

This paper proposes that Congress establish National Standards for the continued regulation, by the States, of motor vehicle sizes and weights on the Interstate System and qualifying primary Federal-aid highways. The proposed standards reflect optimal uniformity, thus ensuring efficient, safe motor vehicle operations without excessive roadwear.

II. PROPOSED NATIONAL STANDARDS

In order to achieve optimal efficiency in interstate trucking operations without impairing highway safety or causing excessive roadwear, the following criteria should be established by Congress as National Standards for state regulation of sizes and weights.

(a) On the National System of Interstate and Defense Highways and on qualifying primary Federal-aid highways, motor vehicle operations should be permitted subject to limits not less than the following:

(1) An overall length of 60 feet, without restriction, for tractor-semitrailer combinations.

(2) An overall length of 65 feet, without restriction, for tractor-double trailer combinations.

(3) An overall width of 102 inches.

(4) A single-axle weight of 20,000 pounds, a tandem axle weight of 34,000 pounds, and an overall gross weight of 80,000 pounds as computed by application of the current Federal bridge formula "B".

(b) On a restricted number of controlled-access interconnecting segments of the National System of Interstate and Defense Highways, as designated by Congress or the Federal Highway Administration, the affected states should permit the use of multiple-trailer combinations subject to limits not less than the following:

(1) An overall length of 108 feet.

(2) An overall width of 102 inches.

(3) A single-axle weight of 20,000 pounds, a tandem axle weight of 34,000 pounds, and application of the current Federal bridge formula "B" for computation of overall gross weight.

Under all circumstances and pursuant to criteria established by the Federal Highway Administration, access to terminals, or "break-up" areas, should be permitted within reasonable distances, subject, of course, to the paramount requirement for safe operations.

III. INCONSISTENCY OF CURRENT STATE REGULATIONS

Under the Federal-Aid Highway Act of 1956, maximum weight and width limits were established for vehicles operating on the Interstate System. Although these limits—since increased—ostensibly apply nationwide, the District of Columbia and about one-half of the states are permitted to enforce higher weight limits under "grandfathered" state laws. And at least two states permit wider loads under statutes "grandfathered" in 1956.

The weight limits established by Congress are designed as upper limits, not minimum uniform standards, for Interstate System operations. The states have the option of maintaining lower limits than those imposed by Congress, and a number of them have done so. Unfortunately, these have included a solid tier of six states extending from the shores of Lake Michigan to the Gulf of Mexico—the so-called "barrier states." Trucks operating to legal limits in the East or West have been required to reduce their loads in order to deliver freight in, or pass through, the "barrier states" along the Mississippi.

Among all the states, gross vehicle weight limits range from 73,280 pounds to 148,000 pounds; width limits range from 96 inches to 102 inches; and length limits for a tractor-semitrailer combination range from 55 feet to 85 feet. For other combinations (doubles and triples), length limits range from 55 feet to 110 feet.

(a) *Single axle weight limits.*—As shown in Figure 1 below, the "barrier states" have prevented loading to the 20,000 pound limit for transcontinental traffic. (In preparing this paper, Figures 1-5 have been designed to reflect state laws now in effect.

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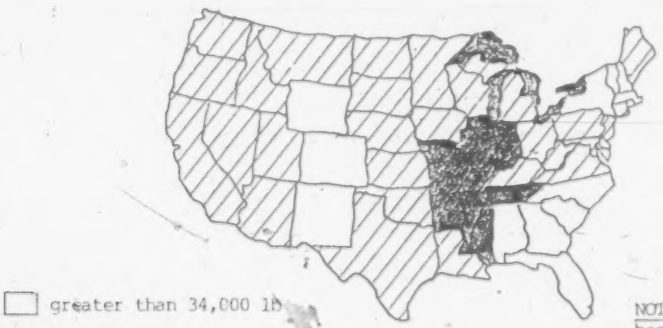
[2] U.S. Department of Transportation, "Transportation Agenda for the 1980's: Issues and Policy Directions" (August 1980), p. 5.

greater than 20,000 lb
20,000 lb
less than 20,000 lb

NOTE: Mississippi becomes 20,000 lb effective 11/1/81; IND. effective 1/1/82; TENN. effective 7/1/81; MO. effective 9/28/81.

FIGURE 1

(b) *Tandem axle weight limits.*—In Figure 2 below, the same "barrier states" have prevented loading of long-haul East-West traffic to the 34,000 pound tandem axle weight limit established in the Federal-aid Highway Act.



greater than 34,000 lb
34,000 lb
less than 34,000 lb

NOTE: Mississippi becomes 34,000 lb effective 11/1/81; IND. effective 1/1/82 TENN. effective 7/1/81; MO. effective 9/28/81.

FIGURE 2

(c) *Gross vehicle weight limits.*—The Midcontinent "barrier states," as depicted in Figure 3 below, have prevented truck movements at the 80,000 pound overall gross weight limit established for the Interstate System under current Federal law.

80,000 lb or more
79,800 lb
73,280 lb

NOTE: Mississippi becomes 80,000 lb effective 11/1/81; IND. effective 1/1/82; TENN. effective 7/1/81; MO. effective 9/28/81.

FIGURE 3

(d) *Vehicle Length Limits.*—There are no Federal vehicle length limits for Interstate traffic. As noted in Figure 4 below, however, a standard tractor-semitrailer

combination of up to 60 feet in length can operate throughout all Western states, most Midwestern states, and a good portion of the South. Some Eastern and Midwestern states, however, are more restrictive.

greater than 65'
65'
60'
55' (TN 56', VA 56', IN 57'3", KY 57'9")
NOTE: RI became 60' effective 5/1/81; IN becomes 60' effective 9/1/81; MT becomes 65' effective 7/1/81; TENN becomes 60' effective 7/1/81; MI becomes 60' effective 9/28/81.

FIGURE 4

(e) *Multiple-trailer combinations.*—As shown in Figure 5 below, two-thirds of the states permit some form of multiple-trailer combinations. A few of the states in the West permit the practicial use of triple-trailer combinations. Some Eastern tollroads and Western states permit the use of turnpike doubles. In much of the East and Southeast, however, double-trailer combinations up to 65 feet in length are not permitted under existing state law.

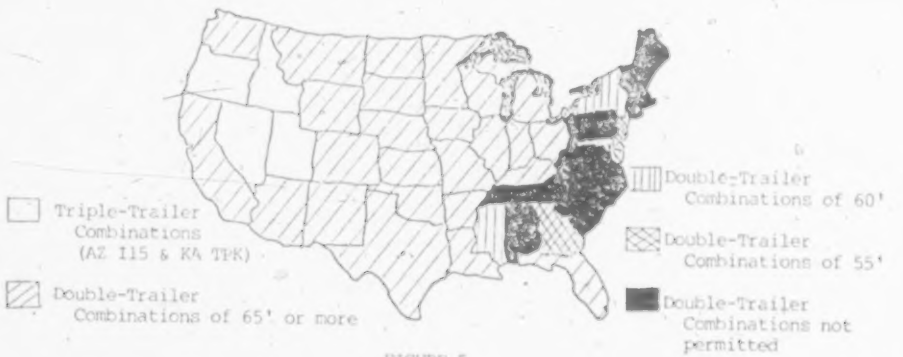

Triple-Trailer Combinations (AZ I15 & KA TPK)
Double-Trailer Combinations of 65' or more
Double-Trailer Combinations of 60'
Double-Trailer Combinations of 55'
Double-Trailer Combinations not permitted

FIGURE 5

Current Federal law establishing vehicle weight and width limits for the Interstate System (23 U.S.C. 127) has not been successful in facilitating uniform or standard requirements for transportation services. While about one-half of the states and the District of Columbia properly look to their own statutes for higher limits, all other states cannot exceed the Federal limits regardless of highway improvements or the requirements of commerce. As noted above, some states continue to maintain weight limits below those established by the Highway Act. The result burdens interstate commerce and substantially increases consumer cost.

IV. THE NEED FOR NATIONAL STANDARDS

There are obvious inefficiencies that result from states independently establishing different requirements for motor carrier equipment. In interstate trucking, operators must subscribe to the lowest common denominator within their service areas, or to the lowest nationwide common denominator if their service obligations or business opportunities extend throughout the country. Their only alternatie is to change equipment configuration or loading conditions whenever they approach a state line where the rules and regulations change.

When a few states impede interstate commerce with unilateral action, congress should respond with controlling standards for regulation under the Commerce Clause of the Constitution, and the courts should enforce those standards under the Supremacy Clause. The demands of modern interstate commerce require mandatory

National Standards for the regulation of truck sizes and weights on the Interstate System and qualifying primary Federal-aid highways. The standards in this paper are designed to reflect a balance among competing interests, and should become the asis for legislative action in the 97th Congress.

(a) *Proposed uniform weight limits.*—In general terms, the remaining "barrier states" prevent operators from loading to the Interstate limits established by Federal law. Almost all other states, East and West, permit such loading. The proposed standards would allow operations throughout the country on the Interstate System and certain designated and qualifying primary state highways.

(b) *Standardized use of 65-foot tractor-double trailer combinations.*—Used today almost universally throughout the West, Midwest and Southwest, the standard 65-foot tractor semitrailer-trailer (28-foot double-trailer) combination would be permitted on all Interstate Highways and qualifying primary highways. The 17 states and District of Columbia prohibiting the use of this equipment are concentrated in the East and Southeast.

(c) *Standardized use of 60-foot tractor semitrailer combinations.*—Only the District of Columbia and eight states extending from the Missouri River to the Atlantic Coast do not allow this combination length. North-South operations East of the Missouri River are impeded by this "barrier," and transcontinental operations are inconvenienced. The National Standards would permit throughout the country the use of a tractor-semitrailer combination of up to 60 feet in length.

(d) *Uniform width limits.*—The 102-inch overall vehicle width permitted under Federal law for buses, and for trucks in at least two states, would become the minimum standard for state vehicle width regulation on the Interstate System and qualifying primary highways. In practical terms, this requirement would allow the loading side-by-side of two four-foot pallets or banded 4-by-8 foot containers of wallboard, plywood, or other building materials. A great percentage of packaged cargo is now delivered for shipment in the standard 4-foot pallet or container. This requirement would permit side-by-side loading on trucks (as on rail cars), and would increase width limits by only six inches in most states.

(e) *Turnpike doubles and triples.*—Today some states permit double- and triple-trailer combinations in excess of the proposed National Standard 65-foot length limit for tractor-double trailer combinations. Those states have, in some cases, permitted use of so-called "turnpike doubles or short triples" on designated controlled-access roadways, with length limits up to 110 feet.

If Congress concludes after hearings that commerce would be served by the safe and efficient use of double 45-foot trailer combinations, or triple 28-foot trailer combinations on a restricted and limited number of interconnecting Interstate System segments, the standards for such limited operations should be adopted as outlined above. The experience of States which now permit such combinations ought to be the basis for decision on this issue.

(f) *Productivity savings.*—It is unquestioned that increased productivity in motor carriage will result from the proposed National Standards, and that consumer costs for transportation therefore will be reduced. Although the results of independent studies vary, the data referenced above—savings of between $1.6 billion and $2.8 billion annually—may actually be understated if optimal standards are established as suggested in this paper.

(g) *Fuel conservation.*—Truckers have demonstrated a commitment to save fuel. According to the U.S. Department of Transportation, the industry conserved almost five billion gallons from 1973 to 1979 by using a number of voluntary fuel-saving options.[3] Most fuel conservation that is possible to achieve under existing weight and size standards has been accomplished. But important additional fuel savings can result if haphazard and inconsistent state size and weight limits are standardized at optimal levels.

A study by one company, as reported in Congressional testimony, shows that optimal weight and size limits, uniformly established, could result in savings of 2,200 barrels of fuel per day in providing only one percent of the nation's intercity ton-miles by motor carrier. In an industry that consumes more than 20 billion gallons of fuel each year, the savings will be significant if the reforms, as proposed in this paper, are adopted.

The fuel savings from optimal weight and size regulations will undoubtedly excess those achieve by the industry in the voluntary conservation program cited by DOT above.

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[3] N.H.T.S.A., "New Trucks Save Fuel," U.S. Dept. of Transportation, Washington, D.C. (January 1981).

V. THE OTHER CONSIDERATIONS: HIGHWAY CONSTRUCTION, MAINTENANCE AND SAFETY

Any program of standardized vehicle weight and size limits should include an analysis of additional highway construction costs, maintenance costs, and safety.

(a) *Highway construction costs.*—Although no *major* alterations appear to be required on the Interstate System, there may be some modifications on the primary Federal-aid highway system which should be made in order to ensure the most efficient motor carrier service in all states. Of course, a primary state highway will not be included in the designated system if its design specifications are inadequate to assure safe operations. A "qualifying primary Federal-aid highway," for the purposes of this paper, is one which meets design specifications and rationally ought to be included in the system.

Where improvement may be desirable or necessary on a highway to acommodate optimal traffic, budget constraints and other factors reasonably may delay such improvement. In comparison to potential consumer savings and fuel conservation, however, any one-time capital expenditure for highway improvements required to meet the National Standards will be modest and wholly cost-justified.

(b) *Highway maintenance costs.*—After National Standards are established in all the states, on-going maintenance costs will not be materially greater than costs experienced today. Roadwear is not a function of vehicle weight per se, but a function of the distribution of weight over the axles. The distribution of weight as proposed in this paper is not different from that already established in Federal law as the maximum permissible on the Interstate System.

It is little understood, moreover, that the purpose of double- and triple-trailer combinations in excess of 65 feet in length, where permitted, is not primarily to increase gross weight capacity, but to increase volume capacity for light-density freight. The use of double- and triple-trailer combinations actually reduces roadwear (1) by reducing truck trips and (2) by distributing weight over more axles. Indeed a 108-foot "turnpike double" combination grossing up to 129,000 pounds in weight imposes materially less wear-and-tear on the roadway than does a standard 80,000 pound tractor-semitrailer combination.

(c) *Highway safety.*—The National Standards proposed in this paper are safe.

There are more than 24 million commercial trucks licensed in the United States. Of these 1.1 million are truck-tractors used in combination vehicles. Any system of regulation which reduces the aggregate number of truck trips without increasing the hazard of an individual truck trip inescapably improves the safety performance of the fleet. The National Standards proposed in this paper will obviously reduce the aggregate number of truck trips performed by the combination-vehicle fleet. Therefore, an assessment must be made of the *specific* safety record of vehicles and drivers operating to the proposed minimum standards. If that safety record is at least equal to other vehicles and drivers, then overall safety will be enhanced.

Fortunately, extensive data are now available on operations by vehicles that conform to the proposed National Standards for weights and sizes. The safety record has been excellent. Moreover, there has been no evidence that the lower gross weight limits in the six Midcontinent "barrier states" have contributed to safer operating conditions on the highways. In fact, by increasing the number of truck trips, these lower weight limits increase exposure, and therefore, undoubtedly increase the number of highway fatalities in those states. And there has been no evidence that 102-inch wide buses—or 102-inch wide trucks—constitute any greater hazard on the highways.

In the 33 states which now permit them, billions of miles of operating experience has demonstrated that 65 foot double-trailer combinations are among the safest vehicles on the highways. The "articulation point" between the two trailers (1) enables them to "track" (i.e., follow the front wheels) more consistently than a tractor-single trailer combination, (2) permits greater maneuverability, and (3) typically affords better braking capacity. Any questions about the safety of this equipment have been put to rest by the facts.

Moreover, those states and toll roads which permit operations by "turnpike" double-trailer and triple-trailer combinations (up to 110 feet in length)—relatively few in number today—have found that the longer vehicle combinations actually operate more *safely* than other, smaller combinations. There are a number of reasons for this result. In the case of triple-trailers, for example, braking is more effective.

In one safety analysis, based upon 431 million miles of "turnpike doubles" operations (108 foot), the accident rate for the double-trailer rigs was 1.72 accidents per million miles of travel, compared to 2.17 accidents per million miles for all tractor-trailer combinations. The extensive experience in those states permitting "turnpike doubles" has been adequate for Congress to establish, based upon an objective hearing record, that a limited access, interconnecting system of Interstate segments

should be designated for long-haul operations subject to the specifications outlined above.

VI. CONCLUSION

In view of the discussion presented above, Congress has both the opportunity and the obligation to consider carefully, in public hearings, the establishment of National Standards for vehicle weights and sizes on the Interstate System and the qualifying primary Federal-aid highway system.

On the available evidence, Congress should conclude that reform of motor vehicle weight and size controls is in the public interest. It should enact promptly the necessary legislation to establish National Standards as proposed in this paper.

Senator PRESSLER. Thank you very much.

Mr. Browne?

Mr. BROWNE. Yes, Mr. Chairman. Thank you. My name is Thomas Browne, vice president, United Parcel Service of Greenwich, Conn. I have served UPS for almost 25 years in various capacities. I am here in support of S. 1402, the Uniform Motor Vehicles Standard Act. This legislation is needed to set a uniform, nationwide standard for twin trailer sizes to eliminate confusion and waste in trucking operations and to conserve our precious fuel reserves.

UPS employs over 108,000 people who serve on a daily basis over 550,000 business shippers and thousands of private citizen shippers sending packages to millions of consignees. UPS delivers over 6 million packages each day to and from any point in the Nation. We operate 35,000 package delivery vehicles and 25,500 tractors and trailers. We are a charter member of the national voluntary truck and bus fuel economy program. This is sponsored by DOT, DOE, and the EPA.

Since 1975, the motor carrier industry has saved over 5 billion gallons of fuel through its fuel economy efforts. Manufacturers of vehicles and vehicle components continue to work closely with the motor carrier industry to develop additional fuel efficient components on vehicles. These efforts have become a way of life within the industry.

With the success of the industry in saving 5 billion gallons of fuel over 5 years, we must realize that Congress has had, for many years, the opportunity to increase motor carrier productivity and save many more millions of gallons of fuel. This opportunity existed even before we became faced with the fuel shortages that have seriously impacted the economy of this Nation.

This opportunity still exists today. This proposed legislation again gives Congress the chance to meet its responsibility in the important area of uniform, nationwide vehicle size. We sincerely hope that in considering this legislation, Congress will rely upon the record built by the industry in serving the needs of business in all parts of the country.

I mentioned that Congress has had the opportunity for years to save millions of gallons of fuel. In the past, Federal legislation has been restricted to trucks' maximum weights. This approach, while creating much controversy, has not produced the efficiency and fuel economy anticipated. It was mentioned earlier that very few vehicles can load the weights that are now authorized.

Studies have shown that most trucks cannot load the maximum weight permitted by Federal legislation. There was some mention of 50 percent of them cannot. There are other studies that show

only 10 to 30 percent can load them. Most trucks are filled to capacity before reaching the weight limits. Therefore, truck size and length are the keys to fuel economy and increased efficiency that will benefit the public.

In 1964, the American Association of State Highway Transportation Officials recommended a truck weight formula that included 65-foot twin trailers. In 1974, the Federal Department of Transportation recommended a formula including 70-foot twin trailer combinations. Congress has not acted on uniform size and length legislation, although Transportation and highway officials have made such recommendations for almost 20 years. Legislation has been restricted to truck weights. History has proven that twin trailer combinations are safer than single unit tractors and trailers. They reduce highway damage because the weight is distributed over more axles, saves millions of gallons of fuel, and increase productivity 25 to 30 percent.

UPS operates approximately 444 million miles per year in our tractor-trailer operation. We operate many twin trailer combinations in those States where they are permitted. Our experience is that twin trailer combinations are safer to operate than single unit tractors. We have not computed the amount of fuel we have saved over the years from our twin trailer operations, but our engineers have estimated that if we are permitted to operate twins in those States where they are presently prohibited, we would save approximately 6.2 million gallons of fuel annually.

This is a substantial amount of fuel saving for just one company. We sincerely hope Congress will pass 65-foot twin trailer legislation. If this type of operation was untested and represented uncharted waters, some reluctance would be understood. However, there is over 20 years' of experience in the operation of twin trailers today. Based on that favorable experience, over two-thirds of the States permit the operation of 65-foot twin trailers. We believe the unfair and unreasonable burden on interstate commerce by some States should be eliminated by the passage of S. 1402.

Thank you. One thing I would like to add, we are participating in the program mentioned by Mrs. Barber in South Dakota, and have also saved considerable fuel economy there.

Senator PRESSLER. Thank you, and I thank the members of the panel.

Let me ask a question to Mrs. Barber and one to Mr. Browne. First, to Ms. Barber, one of the questions which is always raised concerning the operation of turnpike doubles is the problem of safety. I know you mentioned in your testimony that since 1978, that you began using the turnpike doubles to the end of 1980. As I understand it, your company had no accidents which qualified as reportable under the Bureau of Motor Vehicles Standards Safety. I also understand there has only been one accident since December 31 involving a turnpike double, and perhaps you could explain the situations surrounding this one accident. But in a broader sense, could you please elaborate on Barber Transport's general experience with the safety record of these particular motor vehicles?

Mrs. BARBER. With specific regard to the single accident we have had since December 30, 1981, it was an accident health-related on

the part of the driver. It had nothing whatever to do with the equipment, the configuration, the traffic, or the highways.

As far as our general safety record is concerned, I would like to make a point. We are especially concerned about safety and have always been, because of the fact that my husband was in safety work before we started our business, our trucking business. We have had the honor to achieve many national, as well as many of the State awards for our highway safety records. I think that demonstrates our overriding interest in highway safety.

Senator PRESSLER. Mr. Browne, the safety doubles has been at issue today. Your company has been running doubles for some time, and you stated in your testimony your belief in their safety as compared to single tractor semitrailers. Do you have some specific accident data on doubles which you could submit for the record?

Mr. BROWNE. Yes, sir. In our tractor trailer operation we have 0.33 accidents per 1 million miles. In our twin trailer operation, which comprises about 25 percent of our fleet, represents 16.6 percent of our accidents. Talking about the turnpike doubles, we have been running those for almost 20 years over the Massachusetts, New York, and Ohio turnpikes and have found them relatively safe. The 16.6 figure includes the turnpike doubles as well as the 65-foot twins.

Senator PRESSLER. All right. I would address this to Mrs. Barber who knows I have been particularly interested in the problem of transportation service in rural areas, small towns. Perhaps it is premature to predict the effects of trucking deregulation in such areas, however, I continue to be concerned about the possible loss of trucking service to small towns.

I know that out of the 50 South Dakota communities served by Barber Transportation, only 3 have a population of over 5,000, so that is very unique. I am sure the committee is interested in hearing how your company can continue to serve so many of South Dakota's small towns in the face of the current economic conditions and the general deregulatory atmosphere. And specifically, could you comment on what, if any, effect of the use of turnpike doubles has had on Barber Transportation's ability to continue carrier service to small towns?

Mrs. BARBER. Yes, sir. I would like to make a point that the operation of the twin 45's known as the longrun program has made it possible for Barber Transportation to operate in the black. Without that particular opportunity, we may not have been able to operate in the black at the present time, without having to have cut service and perhaps many people would be losing jobs because of the necessity of reducing costs.

Therefore, I feel that the longrun program should be given credit for saving jobs and for enabling us to continue to serve the very small communities known as rural America.

Senator PRESSLER. This is a question for any volunteer on the panel from Senator Cannon, who left. Senator Cannon would like comments on the following: One of the criticisms of the so-called turnpike doubles is that they are only suited for the low-density, straight, flat highways through the West and Midwest, but not the heavily traveled and meandering highways of the East.

Mr. BROWNE. I guess we operate on every highway in the country, whether it is flat, straight, or meandering. I don't think the type of highway has any significance in the operation of motor carrier equipment. I think this is where you get into the proper training of the employee and the kind of terrain he has to drive on. In my judgment, it does not relate to the type of highway. It is the type of training that you give your people to drive in that area.

Mr. MORGAN. We have operated twin 40-foot trailers on the New York throughway with permits for a number of years, and have—between Syracuse and Buffalo, and we have never had an accident with one of them.

Senator PRESSLER. Well, I thank the panel very much. Are there any other witnesses to be heard?

[No response.]

Senator PRESSLER. Then I thank the witnesses, and we adjourn the meeting.

[Whereupon, at 11:54 a.m., the hearing was adjourned.]

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

STATEMENT OF THE AMERICAN MEAT INSTITUTE

The American Meat Institute is a national trade association representing over three hundred meat packing and processing establishments and over seven hundred associated companies conducting business in all fifty states. AMI wholeheartedly supports the goals and concepts of legislation such as S. 1402 that seeks to provide uniformity, increased productivity and fuel efficiency in truck transportation.

The lack of uniformity with regard to increasing permissable truck length, width and weight limits is a significant impediment to the efficient transportation of meat products and other consumer goods. AMI views these operating restrictions as unreasonable, fuel inefficient and adverse to the public interest. The efficiency of trucking operations is a matter of national concern and is a direct result of the abililty to utilize the national highway system in a practical and effective manner.

Realistic size standards, devoid of variations among the states, are instrumental to increased productivity for the trucking industry. Fewer trucks could be utilized more efficiently to accomplish greater carrier capacity with less fuel consumption and considerable savings in transportation costs. The current lack of uniformity for size standards which exists in some states is one of the major obstacles to achieving cost effectiveness within the trucking industry. Unnecessarily high transportation costs are passed on until ultimately consumers bear the burden of avoidably inflated prices.

The meat industry operates on a high volume, low profit margin basis that mandates full utilization of its assets—including the efficient operation of its truck fleets. The transportation of meat products is primarily dependent upon the highway system, and would be considerably more efficient under a system of uniform standards for truck weight, length and height.

AMI urges the adoption of a uniform weight provision standardizing the gross combined weight at 80,000 pounds, an elimination of the 45 feet maximum trailer length provision and an overall limit for all combinations set at 65 feet in length and 102 inches in width. We urge the Committee to adopt language that would prohibit states from barring the use of "twin-trailers". With passage of this legislation, our members would be able to purchase vehicles based on economy of use—with greater hauling potential and accessibility in all states.

STATEMENT OF HARRIET HOLTZMAN-PARCELLS, ENVIRONMENTAL POLICY CENTER

My name is Harriet-Parcells and I am submitting this testimony on behalf of the Environmental Policy Center (EPC), a private non-profit organization, working for the protection and efficient and environmentally sound use of the nation's energy resources. As over half of the nation's oil is consumed by the transportation sector, the Energy Conservation Project of EPC has been transportation policy a top priority. If we are to reduce our dependence on petroleum, wise policy decisions within the transportation sector are critical.

In commenting on S. 1042, a bill which will allow for wider and longer trucks on the nation's highways, we will address three key concerns:

1. The state of the nation's highways and the relationship of heavy trucks of accelerated deterioration;
2. The need to consider the implications of larger trucks on the energy efficiency of the entire transportation system; and
3. Public safety concerns associated with growing numbers of larger trucks on the highways

I. THE ROLE OF HEAVY TRUCKS IN THE ACCELERATED DETERIORATION OF THE NATION'S HIGHWAYS

In its report, the "Status of the Nation's Highways: Conditions and Performance," the Department of Transportation reported that all of the nation's roads are declining. By 1978, over 55 percent of the mileage for each type of highway, with the

exception of the Interstate, was in "fair" or "poor" condition Mileage on the Interstate in poor condition has more than doubled in the three year period of 1975–78.

TABLE 1

[Percent]

	Rural pavement			Urban pavement		
	Poor	Fair	Good	Poor	Fair	Good
Interstate:						
1975	4	22	74	3	29	68
1978	9	28	63	8	34	58
Arterials:						
1975	7	46	47	6	46	48
1978	6	52	42	6	53	41
Collectors:						
1975	10	60	30	9	55	36
1978	9	66	25	8	59	34

Source: Status of the Nation's Highways.

The Department of Transportation estimated that an average annual federal investment of $5.9 billion will be required in order to maintain current conditions on the federal-aid system. Of this investment, $3.6 billion is required for the Interstate and Primary systems and $2.3 billion for the Urban and Rural systems.

TABLE 2.—FEDERAL-AID CAPITAL INVESTMENTS: 15-YEAR NEEDS TO MAINTAIN CURRENT CONDITIONS

[1980 DOLLARS, BILLIONS]

	Current Federal share	Total Federal cost		Average Federal cost	
		High travel	Low travel	High travel	Low travel
Primary	0.48	$30.2	$23.8	$2.0	$1.6
Interstate [1]	.90	24.7	21.8	1.6	1.4
Secondary	.30	17.8	16.7	1.2	1.1
Urban [2]	.40	16.1	15.8	1.1	1.1

[1] Includes $4.5 billion for bridge deck repair. Does not include cost to complete.
[2] These levels will not maintain 1978 levels. They represent an upper dollar level that existing FAUS mileage could absorb.

The deterioration of the nation's roads stems from many factors including weather, lack of maintenance dollars and natural aging process. Another factor, however, is the increasing number and weight of heavy trucks on the highways, which are serving to accelerate the rate of deterioration. Roads are designed to carry a certain number of axle loads (ESAL's: equivalent single axle loads) which is determined by projections of the volume of traffic of each vehicle type and its projected weight. Increases in the numbers and weights of vehicles beyond the projection used in determining design life, will have the effect of accelerating deterioration.

"Projected traffic for highway design life includes estimated number and weight of heavy truck axles. These projections are critical because heavy truck axles have much greater impact on pavement life than auto axles . . . relatively small increases in heavy truck traffic shorten pavement life exponentially if pavement thickness remains the same." [1]

Bridge life is also affected by gross vehicle weight and axle weight.

"Axle weight damages bridge decks and deck supports much as it does pavements while gross weight causes stress to spanning structure between the piers." [2]

The growth rate of heavy trucks has been much greater in the past decade than that of automobiles. In 1969, automobiles were 82 percent of the traffic stream, while combination trucks were about 7 percent. By 1979, automobiles had decreased by 13 percent, to 69 percent of all traffic, while combinations had grown to 11

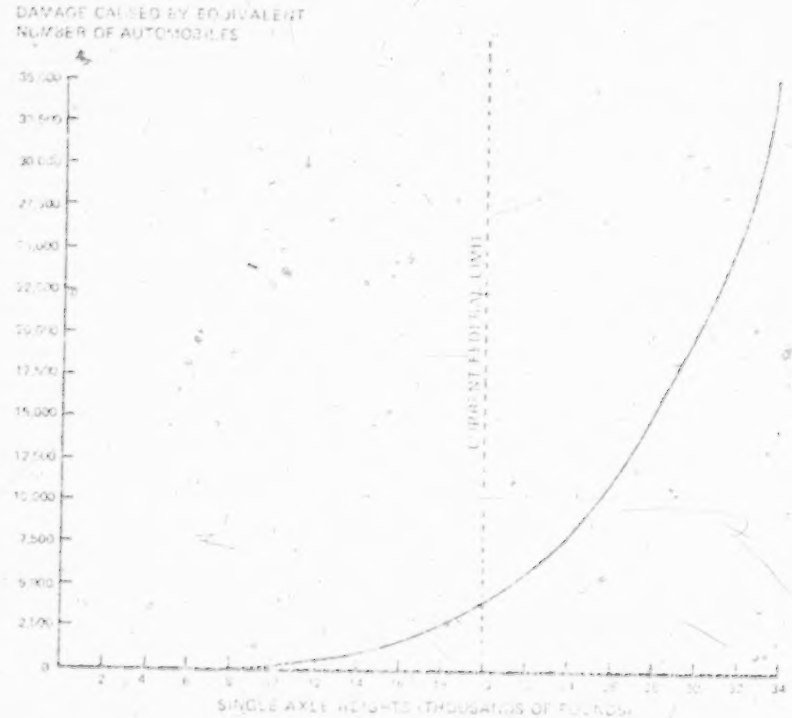
[1] General Accounting Office, "Excessive Truck Weight: An Expensive Burden We Can No Longer Support.
[2] Ibid.

percent. Most importantly, the heaviest trucks, the 5-axle combinations, doubled their numbers from 4.2 percent in 1969 to 8.9 percent in 1979.[3]

The reason that increased axle and gross vehicle weight are of such concern is that increased axle weight have an exponential effect in terms of the damage they do. This relationsip was determined by the AASHO (American Association of State Highway Officials) Road Test in 1962 and has been well accepted ever since. According to these findings, a 5-axle combination tractor-trailer loaded to the current 80,000 lb. limit in many states, weighs about as much as 20 autos, but its impact, based on the Road Test, is that of 9,600 autos.

FIGURE 1

RELATIVE DAMAGE CAUSED BY INCREASE IN SINGLE AXLE WEIGHTS ABOVE FEDERAL UNITS



Questionnaire data from 45 states indicates that only 38 percent of State highways and less than 63 percent of their interstate mileage can accommodate current heavy truck traffic without reducing highway life. In addition, the GAO reports that the increased axle weight limits (in 1975, federal weight limits were increased from 16,000 to 18,000 lbs. for single axles, from 32,000 to 34,000 lbs. for tandem axles and the gross vehicle weight increased in almost all states from 73,280 to 80,000 lbs.) made an additional 54 percent of the Interstate bridges inadequate to safely accommodate loads at the new federal maximum without reducing serviceable life.

While S. 1402 does not increase the vehicle weight limits, it does allow for longer and wider trucks with greater carrying capacity. The result will be more heavier trucks on the nation's highways, exacerbating the already serious maintenance and repair difficulties facing states across the country. The fact that these trucks may be within the federal limits does not change the fact that more of them will be heavier, and thereby do more damage than previously.

Complicating the issue is the finding by many states, in conducting their Highway Cost Allocation Studies, that heavy trucks are already underpaying in taxes in relation to the damage they do to the roads. According to the 1978 Georgia study, 4-axle and 5-axle trucks paid only 51 percent of their highway cost responsibility.

[3] Loadometer studies of the Federal Highway Administration.

Oregon, California and Florida have reached similar conclusions.[4] Because of its own concerns with this issue, Congress requested in the Surface Transportation Act of 1978, that the federal Department of Transportation conduct a Highway Cost Allocation Study. The final report is due to Congress in January 1982. The Second Progress Report to Congress has indicated that if the present tax structure continues, combination trucks will be underpaying in taxes by 50 percent compared to their cost responsibility. This underpayment represents a subsidy to that class of vehicles, with other vehicle classes paying more than their "fair share".

The Environmental Policy Center recommends implementation of a federal weight distance tax which would serve to correct this inequity in the market and generate needed revenues for maintenance and repair in a more equitable manner. If trucks are to be allowed to be larger and heavier, which EPC opposes, the need for a federal weight-distance tax becomes more important than ever. The Highway Revenue Act of 1956 provides in Section 209 that if it appears that there is an inequitable distribution of the tax burden among various classes of persons using federal-aid highways, or otherwise deriving benefits from such highways, Congress shall enact legislation to bring about such equitable distribution.[5] As a final note, it should be recognized that the states have full legal responsibility for the physical maintenance of the facilities and their operation. It would appear that a change in vehicle standards should be jointly agreed to by all states.

II. IMPLICATION OF LARGER TRUCKS ON THE ENERGY EFFICIENCY OF THE ENTIRE TRANSPORTATION SYSTEM

An efficient intercity freight transportation system is critical to a well functioning economy. In 1978, approximately, 2.3×10^{12} ton miles of freight were transported by intercity shippers. Railroads and trucks often find themselves competing for the same types of freight. Freight transportation by rail is more energy efficient: rail uses only 27 percent of the fuel that trucks require for the same shipment. Yet, the percentage of freight shipped by rail has decreased from 56 percent in 1950 to 36 percent in 1977. At the same time, freight by truck has increased from 16 percent to 24 percent of all intercity freight.

"The primary reason for this shift is the faster and more flexible service trucks offer. However, trucks would not have been able to compete as well in terms of price if they had not been subsidized heavily by the government through highway construction and maintenance. Railroads must construct, maintain and pay taxes on their tracks and road beds, giving them a large overhead of fixed costs."[6]

The present underpayment by heavy trucks for the maintenance and repair of the highways has already been discussed. If trucks are allowed to become larger, without paying adequately for the damage they incur, it is likely that this competitive edge will contribute to continuing the shift away from rail, a more energy efficient freight mode, as we have been witnessing over the past three decades. A weight-mileage tax would allow rail to compete with the trucking industry on a more equitable basis, and contribute to energy efficiencies in the overall transportation system. In order for full energy efficiency potentials to be realized, rail tracks and bed should also be improved in areas where deferred maintenance, due to constrained finances, has occurred.

As a final note in the area of energy efficiency, while the trucking industry has argued that larger trucks would lead to energy savings, the report by the Solar Energy Research Institute indicates that fuel savings from larger trucks are likely to be less than savings gained through improved technologies, such as improved engines, aerodynamics, and enforcement of the 55 mph speed limit.

III. PUBLIC SAFETY CONCERNS ASSOCIATED WITH LARGER TRUCKS ON THE HIGHWAYS

A final concern of the Environmental Policy Center involves the question of public safety. This bill wil allow for the presence of longer and wider trucks at a time when the number of small passenger cars is also growing. Traffic accidents involving heavy trucks (over 26,000 lbs.) killed 5,335 persons in 1979, a 53 percent increase over 1975 levles. By contrast, in fatalities in accidents involving passenger cars only, a five percent increasse was experienced over the same period of time. Fatalities involving all vehicles increased by 15 percent. (see Table 3). Furthermore, in accidents between passenger cars and heavy trucks, the passenger car occupant is much more likely to suffer severe injury or death, regardless of who is at fault.

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[4] Conservation and Alternative Fuels in the Transportation Sector, Solar Energy Research Institute Study, 1980.

[5] Ibid.

[6] Ibid.

Allowing wider and longer trucks on the road will increase the visibility obstruction and difficulty in passing that large trucks

TABLE 3.—SELECTED MOTOR VEHICLE STATISTICS: FATALITIES

	1975	1979	Percent change
Accidents involving heavy trucks	3,483	5,335	+53.2
Accidents involving combination trucks	3,320	4,965	+49.5
Accidents involving passenger cars	34,830	36,731	+5.5
Accidents involving all vehicles	44,525	51,085	+14.7

Source: National Highway Safety Administration. Fatal Accident Reporting System. "Increases in size and weight limitations must meet the test of the public interest. That is, such proposals must not be detrimental to the public."
Maximum Desirable Dimensions and Weights of Vehicles, Commerce Department report to Congress, 1964.

Lane width is a critical element in determining the safety of wider and longer vehicles. While the lanes on the Interstate are 12′ and 13′ wide, other federal-aid highways are not necessarily built to the same standards and if larger trucks are permitted, they will certainly travel to some extent on such roads as well. The 96″ width presently permitted is already from 1-2 feet wider than conventional auto widths. Exceptions to the 96″ widths are already permitted in many states where needed.

"For conventional motor vehicles, the federal act, through the operation of its "grandfather" clause, permits at least one general or specific exemption to its 96″ width-limitation in more than three quarters of the states * * * A major state criterion for exceptions to 96″ width is availability of a highway of adequate width. Exclusions are also granted for the transportation of products important to the local economy." Source: Ibid.

Thus, it appears, that where it is important for the economy, many states already grant exceptions to the 96″ width. Yet, by changing the standard to allow all trucks to achieve this width, the number of trucks of this width will increase, raising questions about protection of public safety.

Currently, a 55′ length is accepted in all states which allows the common 40′ and 45′ trailers to operate nationwide. Most states, east of the Mississippi, however, prohibit use of twin-doubles or restrict them to lengths below the 65′ prescribed in this legislation.

"There is a point where increases in vehicle length create serious safety problems: in passing operations, particularly on 2-lane highways; in the time required to clear at-grade intersections and in negotiating turning movements." Source: Ibid.

This legislation would require such states to permit wider and longer trucks on their federal-aid highways, despite public safety and other concerns such states hold.

CONCLUSIONS

In conclusion, because of the three concerns elaborated above (state of the nation's highways and the relationship of heavy trucks to road damage; questions of energy efficiency, and; public safety concerns), the Environmental Policy Center does not support the proposals in S. 1402 to allow for increased widths and lengths and use of twin-doubles on the federal-aid highways. If such increases should be allowed, they should certainly be accompanied by legislation enacting a federal weight-mileage tax to correct the inequities in the present tax structure and underpayment by heavy trucks.

Statement of Food Marketing Institute

The Food Marketing Institute (FMI) appreciates the opportunity to present the views of the food distribution industry on S. 1402, the "Uniform Vehicle Standards Act of 1981".

FMI is a non-profit trade association whose over 1,100 members are food retailers and wholesalers of all sizes. The membership includes independent grocers, food chains, and voluntary and cooperative wholesalers. Many of FMI's members operate motor carrier fleets in private carriage, utilizing them in the transportation of goods from warehouse to store and, when possible, to backhaul products from a supplier to the warehouse. In addition, so much of the product offered for sale in food stores arrives at the warehouses by regulated and independent motor carriers that FMI members are individually and collectively among the largest receivers by truck in

the country. Clearly then, legislation which would impact the character, cost, and productivity of transporting goods by motor carriage is of vital and direct interest to FMI and our members. S. 1402 bears directly both upon the proprietary truck operations of food marketers and the regulated and independent truckers who serve them.

Particularly during these times of continuing inflation and long-term fuel shortages, maximizing productivity and conserving fuel have become national imperatives. This is uniquely so in our industry which is responsible for making the most basic necessity—food—available to the public in wholesome condition and at reasonable cost.

Those provisions in S. 1402 that would require the states to permit the use of 60-foot tractor semitrailer combinations and the use of 65-foot twin-trailer combinations would significantly improve the productivity of our nation's trucking fleets. Accordingly, FMI strongly supports these provisions. The new mandatory national length limits would eliminate the existing barriers to efficient transportation of food products across the country.

Today, sixteen states and the District of Columbia do not allow 65-foot twin-trailer combinations, despite the fact that this transportation has been proven to be efficient and, more importantly, *safe*. These inconsistent standards result in the underutilization of trucking equipment, requiring the use of extra vehicles and the waste of valuable fuel. In addition, other operating costs including licensing fees and insurance premiums are increased. At the same time the increased number of trucks on the road magnifies exposure to accidents.

Sixty-five foot twin-trailer combinations have been in operation on U.S. highways for many years now. Experience has proven them to be among the safest trucks on the road today. In fact, the Supreme Court just this year upheld a U.S. Court of Appeals decision concluding that Iowa's prohibition against 65-foot twin-trailer combinations could not be justified for safety reasons.

Similarly, the 60-foot tractor-semitrailer combination has been proven to be safe, and the provision in S. 1402 providing that the states must allow a length of 60 feet for those combinations is in the public interest.

Finally, we must take issue with the provision in S. 1402 that would limit the length of a semitrailer in any combination to 45 feet. We see no need for such a limitation at this time. The intent of this provision apparently is to assure drivers that there is enough space in the cab and to assure satisfactory truck handling. Any safety benefits from such a configuration are theoretical at best.

It is our understanding that this issue is the subject of considerable research and study now underway at the Department of Transportation. This important research should be completed before such a restriction is enacted into law.

In conclusion, we believe that this legislation, with the above-mentioned modifications, will increase productivity, reduce costs, and save energy. We thank you for the opportunity for presenting our views on this important legislation.

STATEMENT OF JOHN R. MOOSBRUGGER ON BEHALF OF CAN MANUFACTURERS INSTITUTE

My name is John R. Moosbrugger, and I am Manager of Traffic Systems and Analysis for National Can Corporation, Chicago, Illinois. I am here today representing the Can Manufacturers Institute (CMI), the national trade association of metal and composite can manufacturing companies and suppliers to our industry. CMI member companies account for the manufacture of some 90 percent of the 88 billion cans shipped annually. CMI members ship from plants in over 40 states to customers in all 48 contiguous states. I welcome this opportunity to express our views on S. 1402, the "Uniform Motor Vehicle Standards Act of 1981."

At the outset, I would like to say that the can industry commends Senator Cannon for his diligent work on this bill. In general, we agree with the need for legislation on vehicles moving in interstate commerce regarding uniform minimum size requirements. Such legislation has great potential for increasing productivity and reducing gasoline consumption, two very important considerations in these inflationary times.

We support S. 1402, however, we wholeheartedly disagree with Sec. 4(A) lines 16-19. This section appears to be completely contrary to the intent of the Bill to establish minimum motor vehicle standards. Sec. 4(A) should be amended to insure that no state can impose a length limitation on a single unit in combination of not less than 60-feet overall length for tractor semi-tractor and 65-feet for other combinations of units. Only with this proposed amendment can we be assured of the reduced fuel consumption, reduced consumer cost and increased productivity intended in this Bill. The present wording in Sec. 4, lines 16-19 is actually counterproduc-

tive to the above mentioned goals as a vast majority of states now allow semi-trailers longer than 45-feet.

CAN INDUSTRY EXPERIENCE

The can industry's shipments are "light and bulky"; and this legislation penalizes light and bulky freight. Let me give you some data on the can industry that quantifies our experience and substantiates the negative impact of a 45-foot restriction:

1. The can industry has generally standardized on a 4-way pallet 44"x56".
2. In 1980, 79.2 billion cans moved from can companies to customer locations by motor carrier.
3. Although the number of cans that will fit on a pallet depends on the size of the can, a reasonable number for purposes of calculation is 3,000 per pallet.
4. In a 45-foot trailer we can load on 36 pallets. In a 48-foot trailer we can load 40 pallets.
5. To ship our current production in 45-foot trailers would take 733,000 shipments (79.2 billion÷3,000÷36).
6. To ship the same volume in a 48-foot trailer would take only 660,000 shipments (79.2 billion÷3,000÷40).
7. In other words, we have the potential to ship the same volume while decreasing the number of shipments by 73,000—a 10 percent decrease!
8. Of course, we ship all over the country, but in order to establish a set of values, we have used 250 miles as our statistical "mode" (the point around which the shipments tend to be most heavily concentrated).
9. For a 250-mile shipment, today we can expect to pay about $362.50 or $1.45 per mile.
10. Further, it takes about one gallon of fuel to travel 4.7 miles with the average diesel fuel price today at about $1.321 per gallon.

Hypothetically, we would have the following significant economic results:

By being able to deliver the same amount of product with less trips we have improved on the efficiency of transportation.

We would reduce truck travel by 18,250,000 miles. (73,000 shipments × 250 miles)

Our customers' transportation bill could be reduced by a potential $25,550,000. (18,250,000 miles × $1.45 per mile)

Fuel consumption would be reduced by 3,882,973 gallons. (18,250,000 miles÷4.7 miles per gallon)

Fuel costs would be reduced by $5,129,407 part of which would go to foreign producers of oil with a small effect on the U.S. balance of payments. (3,882,973 × $1.321 per gallon)

Bear in mind that we are only talking about one specific industry and we are not unique in operating this equipment. When one considers various similar industries, the figures for increased productivity and gasoline conservation could be staggering.

MINIMUM WIDTH STANDARD

In S. 1402, there is a provision for extending minimum trailer width standards. For our industry, this extra width cannot be fully utilized since we operate with a standardized pallet. The only way for us to increase productivity is to increase trailer length size. Also, our pallets are directly tied to palletizing and de-palletizing equipment now in use. Changing the standardized pallet size would cost the industry greatly in capital expenditures. While we support the minimum width standard in the bill, we would not be able to utilize it to the fullest extent because of our standardized pallet.

SAFETY CONSIDERATION

As I have stated and supported with statistics, an increase in trailer length can greatly enhance our productivity and reduce travel by 18.3 million miles in one industry alone. Not only will there be less trucks on the road but there should be a direct relationship to fewer accidents and deaths on the highways.

SUMMARY

CMI supports the general intent of S. 1402, but we strongly urge that Sec. 4(A), lines 16–19 be amended as proposed to ensure reduced fuel consumption, reduced consumer cost and increased productivity. We have shown that the increased productivity and decreased gasoline consumption resulting from greater truck length can greatly benefit interstate commerce. The major carriers used by our industry have transferred to and are buying larger than 45-foot trailers and thus it will be

economically difficult for our industry to prosper. The 45-foot trailer restriction will stifle our productivity, rather than promote it.

We are confident the committee will examine carefully the material presented today and vote to amend the harmful and unnecessary 45-foot trailer restriction. Thank you for the opportunity to testify and I will answer any questions the Committee may have.

STATEMENT OF BILL SCHEFFER, NATIONAL VICE PRESIDENT, INDEPENDENT TRUCKERS ASSOCIATION

Ladies and Gentlemen, Mr. Chairman, my name is Bill Scheffer and I am National Vice President of the Independent Truckers Association, and I have a background of 37 years in the trucking industry. In all my years in this business I have never heard anything more widely discussed or just plain cussed than the lack of a federal uniform length and weight bill. A comprehensive, well thought out uniform bill could literally wipe hundreds of antiquated laws off the books and streamline interstate commerce as it has never been before.

A uniform length and weight bill would remove probably more undue burdens from the backs of truckers, independent and company owned alike than any other single piece of legislation now pending within these hallowed walls. The industry on a daily basis deals with 50 sovereign sets of state laws that are contradictory, useless, and in many cases they promote unsafe practices. Lack of uniformity has been a huge source of revenue for the states at the expense of the consumer and the trucking industry. Many an unsuspecting trucker has spent time behind bars in one state simply because he loaded his truck to be legal in another. A trucker leaving New York City with a 5 axle truck and trailer loaded to the 80,000 pound capacity and properly licensed for that amount with an overall length of 60 feet could possibly be legal upon departure but be illegal no less than 137 times before arriving in Los Angeles.

He could be over on several different gross weight laws or on no less than 24 different axle allowances, or on many different inner bridge laws, or again on a multitude of different outer bridge laws.

These same irregular and opposing points of view cost the shippers and ultimately the consumers million of dollars in transportation costs as the trucker simply is forced to load his unit to conform to the lowest set of laws governing lengths and weights in his path. In other words, he is actually forced to run at a hypothetical gross weight of 73,280 pounds in several states even though that state and many others have laws allowing 80,000 pounds. This same trucker is also forced to comply with a 55 foot length law even though the state he is travelling in might allow 60 or even 65 feet. In other words, he is being penalized and therefore must adjust his rates to compensate for the lost revenue. Again the person who ultimately foots the bill is the consumer or the shipper.

Truckers are daily forced to contend with a mishmash of extremely complicated and totally absurd bridge formulas that are not only impractical but literally not even understandable. We have seen several police weight enforcement officers give totally different answers on allowable weights based on bridge formulas because they are so confusing and impractical.

The bridge formulas serve no practical purpose, and for those highway engineers who cry out in protest to that statement I can only ask why then do the engineers in each state give a different formula or different set of answers to the same question regarding allowable weight? Bridge formulas have become so absurd that in my home state of Pennsylvania a one half ton pickup truck with two adults travelling in the cab is overweight. In literally every state the highway snowplows and salt spreader trucks are overweight. What is legal here is illegal there.

Another glaring deficiency in the lack of uniformity is the fact that the very laws themselves have impeded the development of safer and more fuel efficent trucks as well as trucks that are much safer and more comfortable. The very nature of the law is such as to force the driver to sit in a cab that has half the engine riding inside with him. In some cases the steering wheel are mounted off center to accommodate larger engines. In several cabs the driver is forced to ride with a high pressure air tank right next to him to allow a larger trailer. One manufacturer positions the whole cab off center to allow the engine to protrude into the drivers compartment. The drivers of these vehicles are forced to combat not only extremely high noise levels and high heat factors but they are prone to early fatigue thereby causing a safety factor. Mr. Chairman, I offer these solutions. I would first do away with all bridge formulas and formulate a federal gross weight for a 5 axle combination of 80,000 pounds with the exceptions of those states already having higher gross weights and allow axles and tandems or combinations of axles also to be determined

in this federal law that would allow 22,000 pounds per axle with the exceptions to be those states once again allowing more and the steering axle to be limited to 12,000 pounds with the exceptions to be those axles certified to be capable of carrying heavier weights and with tires certified to allow higher capacities. I will not go into detail as to weight allowances on all other combinations at this time but will submit under separate cover a complete formula for our proposal.

I also propose that while allowing a 60 foot length limit on all truck and trailer combinations with the exceptions being those combinations in those states already allowing a longer configuration that there be a mandatory 45 foot trailer length limitation. Again the exception would be applicable to those states allowing longer trailers but to be allowed only on those trailers presently in service and to be phased out as those vehicles are retired.

The reasons for this limitation are as follows. If there is not a limit on trailer length but instead an overall length bill instead there is nothing to prohibit the carriers from stuffing a driver into a 1 foot cab with a 59 foot trailer dragging behind. It this example sounds far fetched let me remind you of the Strick "Cab-Under" that was presented to the Department of Transportation in 1976 for certification.

In this combination the trailers were 60 feet from bumper to bumper and the driver was actually stuffed underneath the front trailer in a cab that was literally hanging from the floor of the trailer and was actually lower than a Volkswagen and was not only extremely uncomfortable but extremely dangerous. These are the lengths some carriers will go to gain cargo capability and disregard the safety and comfort of not only the driver but the motoring public as well.

Another very important factor in a trailer limitation law is the fact that this will allow the powers that be in the designing rooms of the truck manufacturing companies to design trucks that are aerodynamic and extremely fuel efficient. As you look around you on the nations highways you will notice that all trucks, whether they be conventional cabs or cab over models, all of them have a blunt, chopped off, flat front end or grille on them. This greatly reduces the ground effect and produces an aerodynamic failure. At a time when the whole world is looking for ways to conserve fuel we allow antiquated state laws like these to penalize the industry and waste precious fuel. Engineers have publicly stated that if given the room to work they can develop trucks that will be 35 per cent more fuel efficient.

These same fuel efficient trucks will result in safer highways and put much needed capitol back into the revitalization of the trucking industry.

In summation, the Independent Truckers Association goes on record as supporting S-1402.

Thank you.

STATEMENT OF THE SOUTH DAKOTA INDEPENDENT TRUCKERS ASSOCIATION (WEST CHAPTER)

Since we are unable to have one of our own members present, we have asked Senator Pressler to present our testimony for us. Thank you, Senator Pressler.

My name is Lowell Engel, President of a group of Independent Truckers from South Dakota. We wish to offer our support of Senate Bill 1402.

In these times of high inflation, interest and labor costs, we must use every possible means of increasing our income. We have come to the end of what we can do to increase our revenue, since every cost that we can cut, we have done.

One big factor that stands in our way when hauling coast to coast, that if it were removed, would help us more than one could imagine—that problem is uniform length and weight in all States. Under our present system if we load in Idaho and go east to Illinois, we can only load 73,280 lbs. and yet all states west of Illinois allow 80,000 lbs. This makes 6,720 lbs. of freight that could no be hauled, for an increase in revenue. The rate on this load was $3.18 cents per hundred. A load of 80,000 lbs. would pay $1599.00 versus $1399.00 on a 73,280 lbs. This is a difference of $200.00. This load will use very little extra fuel, it would do no greater damage to the roads and it is no less safe than the other.

Many of our members are no longer trucking because they could no longer make a living and pay their bills. Those that have survived are having a hard time staying on top of the expenses. That is true of all of us.

This bill, S. 1402, would not cure all our problmes, but would take care of one of the worst that we now have. There is no good reason why we should not have a uniform weight and length bill that would allow us to go from border to border in this great nation.

We thank you for your consideration and for the opportunity to express our opinion on this very important matter.

STATEMENT OF THE UNITED FRESH FRUIT AND VEGETABLE ASSOCIATION

United appreciates the opportunity to present its comments on the "Uniform Motor Vehicle Standards Act of 1981." (S. 1402) United is the national trade association representing the fresh fruit and vegetable industry. Its membership numbers over 2700 companies located throughout the United States. They are engaged in all facets of the fresh produce industry and include growers, shippers, receivers, wholesalers, retailers, truck brokers and motor carriers. Collectively, the members of United handle more than eighty (80) percent of the fresh fruits and vegetables which are commercially marketed in the United States; a fifty-five (55) billion dollar a year industry.

Over ninety (90) percent of all shipments of fresh produce is transported to market by motor carriers. Compliance with a variety of inconsistent state regulatory requirements concerning the weight, length and width of motor vehicles, currently impeded the distribution of fresh fruits and vegetables. On the other hand, a uniform federal weight, length and width law for motor carriers engaged in interstate commerce, such as contained in S. 1402, would increase the efficiency and decrease the cost involved in the interstate transportation of perishable commodities. Therefore, United strongly supports uniform national standards for weights and lengths and widths of motor vehicles operating in interstate commerce.

This position is consistent with the recommendations of the Rural Transportation Advisory Task Force, which was co-chaired by the then-secretary of agriculture Bob Bergland and then-secretary of transportation Neal Goldschmidt. Established by Congress as part of the Rural Transportation Advisory Task Force Act of 1978, P.L. 95-580, the task group published it final report in January, 1980, after two years of study including a series of public hearings. The task group concluded that the difference between truck size and weight regulation within the states was "a cause of energy waste and economic inefficiency, and therefore adverse to the nation's best interests." Accordingly, the task group recommended increased weight and length standards for motor vehicles traveling in interstate commerce. The increased length recommendation is consistent with that contained in the present bill before the committee.

United supports the provisions of the "Uniform Motor Vehicle Standards Act of 1981" which would establish mandatory minimum length limits of sixty (60) feet for tractor-semi-trailer combinations and sixty five (65) feet for twin-trailer combinations. In addition, United supports the provision of the bill that would establish a one hundred two-inch width limit for motor vehicles. Furthermore, United would recommend to this committee an additional provision which would require all states to adopt a minimum gross vehicle weight limit of eighty thousand (80,000) pounds for motor vehicles engaged in interstate commerce. As this committee is well aware a majority of states have adopted these provisions which are contained in this bill under consideration, however, a number of states with more restrictive weight, length and width laws have refused to do so. In many instances, the geographic proximity of these reluctant states represents a "barrier" for transcontinental motor carrier traffic.

Agricultural trucking often involves long west-to-east and south-to-north hauls which must pass through at least one of these various "barrier" states. Consequently, the weight, length and width of motor vehicles transporting agricultural commodities across country must comply with the more restrictive requirements of these few states, instead of the more favorable laws of most other states. United submits that this is a needless burden on interstate commerce. Through these incomparable and inconsistent state laws inefficiencies are imposed upon the fresh fruit and vegetable physical distribution system, in particular, and upon the national transportation system, in general. To eliminate this inequitable and uneconomical situation, United supports the increased, uniform federal length and width standards embodied in S. 1402 and urges this committee to adopt a uniform federal weight standard, as discussed above.

On the other hand, United does not support the provision of S. 1402 which would limit the length of a semi-trailer in any combination to forty-five (45) feet. At the present time, United is not aware of any compelling justificatioin for such a length restriction on semi-trailers.

In conclusion United commends the committee for holding hearings on this very important issue and urges its members to act upon this matter which has been annually discussed, but never resolved. Thank you.

GLASS PACKAGING TRANSPORTATION COUNCIL,
August 28, 1981.

Hon. Senator ROBERT W. PACKWOOD,
U.S. Senate,
Washington, D.C.

Dear Senator Packwood: These comments are being submitted to you by the undersigned on behalf of the Glass Packaging Transportation Council (hereinafter GPTC). GPTC is an association of glass packaging manufacturers located throughout the United States and is composed of the companies listed in Appendix A attached hereto.

Glass packaging products (including glass bottles and jars, tableware, laboratory ware, etc.) are produced domestically at approximately 129 plants located in 32 states and shipped to food, beverage, drug, cosmetic, chemical (household and industrial packers (including home canners)), bottlers, processors, manufacturers, wholesale and retail outlets and institutional buyers throughout the United States. In 1980, millions of tons of raw materials required to produce these commodities (principally soda ash, sand and limestone) and a corresponding volume of finished products are estimated to be transported by our industry; a considerable volume of this traffic will move by motor carrier. Consequently, we have a vital interest as an industry in this proceeding.

The glass container industry is a highly freight intensive industry with most of our freight moving in full truck load lots. Due to the comparatively light weight characteristics of glass (as compared, for example, to iron or steel articles, dense bulk commodities, etc.) our fuel cost of transport to unit moved ratio is very high. It is for this reason that we are strongly opposed to the suggested 45' single unit limitation contained in Section 4(a) of the bill. For years, state limitations on vehicle length have produced fuel wastage and severe burdens on commerce; this is the result of both trailer and overall combination length limitations. By permitting greater trailer lengths, quite obviously our member companies would be able to move significantly more products with the same number of power units. At no time has anyone ever, to our knowledge, produced any probative evidence that trailers in excess of 45' are an increased safety hazard and there is no support for the position that greater trailer length would produce driving discomfort or crowding (this is especially an unsupportable contention in the case of cab-over power units). Senator Cannon has stated a concern that drivers not get "squeezed out" and that a reasonable space be maintained between the tractor and the trailer. He has also stated that he believes 65' doubles are completely safe and reasonable citing the opinion of the United States Supreme Court in *Kassel* v. *Consolidated Freightways*. Obviously, a 60' tractor-single trailer combination cannot be less safe than a double trailer combination. Similarly, if a 65' double does not require a specific cab dimension, it is completely disingenuous to suggest a different conclusion be reached in the case of a single trailer unit.

The enormous fuel savings, reduced highway congestion and substantial cost savings to carriers and shippers alike absolutely mandate trailer lengths in excess of 45'. For this reason we strongly urge you to utilize the efforts of your office to eliminate the 45' limitation in Sec. 4(a) and to insert an affirmative proscription against any state attempting to limit the length of any single unit.

In reviewing the proposed bill we have also noticed that Section 5 does not provide that reasonable access cannot be denied to facilities (such as pick-up and delivery points, air terminals, etc.) that receive or transmit interstate freight destined for transport across the interstate highway and federal-aid primary systems. This oversight could be cured by insertion of the words:

"* * * and facilities for the pick-up or delivery of interstate traffic or for food, fuel, repairs and rest."

Finally, we suggest that language be inserted to make it clear that "commercial motor vehicles" as that term is used in the bill shall include vehicles used in private carriage transportation as well as for hire transportation.

Very truly yours,

ROBERT A. BUSTER, *Secretary.*

APPENDIX A

Anchor Hocking Corp., 109 North Broad Street, Lancaster, Ohio 43130.
Ball Corp., 345 South High Street, Muncie, Ind. 47302.
Barttlet-Collins Co., P.O. Box 519, Sapulpa, Okla. 74066.
Brockway Glass Co., Wood Street, Brockway, Pa. 15824.
Chattanooga Glass Co., 400 West 45th Street, Chattanooga, Tenn. 37410.
Glass Containers Corp., 535 North Gilbert Avenue, Fullerton, Calif. 92634.

Glenshaw Glass Co., 1101 William Flynn Highway, Glenshaw, Pa. 15115.
Indian Head, Glass Container Group, P.O. Box 966, Laurens, S.C. 29360.
Kerr Glass Manufacturing Co., P.O. Box 97, South Main Street, Sand Springs, Okla. 74063.
Liberty Glass Co., P.O. Box 520, Sapulpa, Okla. 74066.
Owens-Illinois, Inc., P.O. Box 1035, Toledo, Ohio 43666.
Pierce Glass, 1 Glass Place, Port Allegany, Pa. 16743.
Thatcher Glass Manufacturing Co., 1901 Grand Central Avenue, Elmira, N.Y. 14902.
Wheaton Industries, P.O. Box 1400, Millville, N.J. 08332.

INTERNATIONAL BROTHERHOOD OF TEAMSTERS,
CHAUFFEURS, WAREHOUSEMEN & HELPERS OF AMERICA,
Washington, D.C., September 24, 1980.

Hon. BOB PACKWOOD,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, D.C.

DEAR SENATOR PACKWOOD: This morning your Committee on Commerce heard testimony on S. 1402, Senator Cannon's bill proposing uniform truck standards.

During the course of the hearings, Mr. Edward Kiley of the American Trucking Associations, Inc. was asked whether his organization supported a 15 foot allowance for the power unit of an over the road truck unit.

Mr. Kiley testified that his association is opposed to such a measure.

We find it shocking that such a statement would be made—particularly in light of the fact that this same ATA representative testified before Congress in 1979 in support of such a proposal.

At that time, Mr. Kiley was asked whether his organization agreed that 15 feet of a truck length should be reserved for the tractor.

Mr. Kiley's answer was: "We have no problem with that providing that doesn't come at the expense of the cargo unit".

That is precisely what our organization asked of your Committee this morning.

In the same answer, Mr. Kiley further stated: "The 15 feet is fine providing the overall length is enough to retain the present cargo units".

Again, we asked that the Committee do exactly what Mr. Kiley said in 1979, that is, reserve 15 feet of space for the truck tractor.

Senator, given this background we believe a statement such as the one given to you today by Mr. Kiley deals a fatal blow to any credibility which the ATA might have brought to this debate.

If you need additional information, please do not hesitate to contact our office.

Sincerely yours,

BARTLEY M. O'HARA,
Legislative Attorney.

TRUCKERS ACTION CONFERENCE,
Baltimore, Md., September 24, 1981.

Hon. BOB PACKWOOD,
Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, D.C.

DEAR SENATOR PACKWOOD: Speaking on behalf of the owner-operators who belong to the Truckers Action Conference and to the Maryland Independent Truckers and Drivers Association, I present the following comments on S. 1402 which proposes to establish uniform national standards for commercial motor vehicle width and length on the Nation's interstate highways.

We urge the Congress to pass this bill, with some slight modification. It will help to correct problems caused by the existing nonuniformity of State regulations on commercial motor vehicle width and length. As a result of the varying State regulations, there is excessive and unnecessary fuel consumption, increased consumer costs, and a productivity loss in motor freight transportation.

The bill will also have a significant impact on improving safety on the highways since it would prohibit trailers from being more than 45 feet in length. At present, some trucking companies are pulling vans that are up to 57 feet in length. This hazardous condition is aggravated when there are heavy winds. The vans then become almost airborne.

We urge the Committee to alter the bill's language (Section 4) prohibiting single units of tractor/trailer combinations from exceeding 45 feet by adding to line 19: "a

provision that such units exceeding 45 feet be phased out, or shortened to 45 feet, within one year of enactment."

Enactment of S. 1402 can be an important step in improving the economic stability of owner-operators. We thank you for considering our comments,

Sincerely,

RITA BONTZ,
Director, Truckers Action Conference.

AMERICAN AUTOMOBILE ASSOCIATION,
Falls Church, Va., September 25, 1981.

Hon. ROBERT PACKWOOD,
Chairman, Senate Commerce, Science, and Transportation Committee, Washington, D.C.

DEAR SENATOR PACKWOOD: This is a follow up to our testimony presented before you committee yesterday concerning the implications of mandating the use of double bottom combination vehicles in all states.

In our testimony we referred to a Federal Highway Administration report on the accident experience of large trucks. We indicated that although the report was marked as Final and was dated September 1980 it had not yet been released pending further analysis by FHWA.

Upon returning to the office after delivering our testimony, I was informed that the FHWA had finally released this report. It confirms the major points made in our testimony. I am attaching a copy of the summary of the major findings of this report. I respectfully request that the summary of findings and this letter be included in the record of the hearings immediately following our testimony.

Sincerely,

CHARLES N. BRADY,
Directer, Highway Department.

Enclosure.

FHWA SUMMARY OF FINDINGS

The following is a summary of the major findings of this study:

There is no significant difference in the accident rates of trucks, non-trucks and the total traffic stream.

Twin trailer combinations have a significantly higher accident rate than single tractor-trailer combinations.[1]

Empty and near-empty combination trucks have substantially greater accident involvement rates than loaded vehicles.[1]

Doubles have a significantly higher ton-mile accident involvement rate than singles on urban freeways and rural non-freeways. There is no significant difference on other roadway types.[1]

There is no significant difference in the accident rate of tractor-trailer combinations with conventional tractors and those with cab-over-engine tractors.

There is no difference in the accident rates of tractor-trailer combinations with 40-foot long trailers and those with 45-foot long trailers.

Truck drivers under age 20 have the highest accident rate followed by drivers 20–29 and 60 years and older.

There is no significant difference between drivers of singles and drivers of doubles in terms of age, professional experience, or experience in their type of rig.

In general, combination trucks with dump or tank type trailers have the highest accident rates.

At freeway interchanges, trucks have more accidents at off-ramps than at on-ramps.

DART TRANSIT CO.,
St. Paul, Minn., October 1, 1981.

Hon. ROBERT W. PACKWOOD,
U.S. Senate,
Washington, D.C.

DEAR SENATOR PACKWOOD: I testified last Thursday representing the Coalition for Energy Efficient Transportation.

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[1] Note: 95 percent of the doubles sample was from California.

Briefly, our position is that we would support this bill provided an important amendment be made which would allow semi-trailers in excess of 45′ within the overall 60′ limit for a combination. I would also like to comment on several statements that were made during the course of testimony.

The rail witness made a statement to the effect that freight should not be diverted from the most efficient mode (rail) to the least efficient mode (truck). This statement overlooks several important facts:

Trucks are the most efficient mode for a vast number of commodities.

Trucks are the only service available to the majority of cities and towns in the United States.

Each mode of transportation should be allowed to be as efficient as possible.

Testimony was presented concerning space allocated to the driver. Allocating 15′ from the front bumper of the tractor to the front of the trailer is totally unnecessary, and is the wrong approach as well, for the following reasons:

There is no assurance that additional space would be used for the driver. The result could be longer hoods for example.

In my 25 years in the industry, I am unaware of any problem with existing tractors.

Additional government regulation in this area is unnecessary.

Another point made was that trucks will be heavier since they will have more cubic capacity, i.e., even though they will not exceed weight laws, they will be more likely to approach the weight limit. It is significant to note that as this occurs, there will also be fewer trucks. In my company, on a typical load of empty tin cans, each truck would weigh 800 pounds more but only 9 trucks would be needed instead of 10—an approximate weight saving of 30,000 pounds (the weight of the empty truck).

One subject not covered in any of the oral testimony is the difficulty the carrier has in trying to segregate trailers of different lengths to avoid loading longer trailers into or through barrier states. The nature of the business is such that the trailers are constantly moving throughout our system (the entire United States) and it is difficult to predict where the next load will be destined and, therefore, impossible to dispatch with certainty. Excess empty miles are the inevitable result.

Very truly yours,

DONALD G. OREN, *President.*

NATIONAL COUNCIL OF FARMER COOPERATIVES,
Washington, D.C., October 19, 1981.

Hon. Bob Packwood,
Chairman, Committee on Commerce, Science and Transportation, Dirksen Senate Office Building, Washington, D.C.

DEAR CHAIRMAN PACKWOOD: The National Council of Farmer Cooperatives is pleased to announce its support of S. 1402, the Uniform Motor Vehicle Standards Act of 1981, with or without the provision that any single trailer not be greater than 45 feet in length.

The National Council has a long-standing Policy Statement which reads:

"*Vehicle Size and Weight.*—The National Council of Farmer Cooperatives supports the liberalization of the present federal and state limitations, with uniformity as a goal, on size and weight of motor vehicles as may be consistent with reasonable safety and highway maintenance standards."

This bill is consistent with that policy and, if enacted, would remove some of the serious barriers to more efficient use of motor vehicle equipment and fule which currently bedevil truckers serving agricultural producers and rural America in general.

We endorse each of the three proposed federal minimum standards:

(1) 102-inch widths for all commercial trucks,

(2) 60-foot overall length for single tractor-trailer combinations; and

(3) 65-foot overall length for double-trailer combinations, which would be made legal nationwide. We would like to see these three standards enacted as a package, but we would support legislation that contained only one or two of them.

As for the proposed 45-foot maximum limit on a trailer unit, our membership is pretty evenly divided on its merit. Therefore, we take no position on that issue.

We urge your Committee to mark up and report out S. 1402 at the first opportune time. We stand ready to assist you in securing its passage by Congress and enactment into law.

Sincerely,

KENNETH D. NADEN, *President.*

AMERICAN PULPWOOD ASSOCIATION,
Washington, D.C., November 12, 1981.

Hon. Bob Packwood,
Chairman, Senate Committee on Commerce, Science and Transportation, U.S. Senate, Washington, D.C.

DEAR CHAIRMAN PACKWOOD: This letter is written to express support of S. 1402, the Uniform Motor Vehicle Standards Act of 1981 by the American Pulpwood Association. APA represents the logging industry that produces wood fiber for pulp and paper manufacture. Members include both supplies and consumers of pulpwood in the United States.

We strongly favor:

(1) Increasing the federal uniform width for motor vehicles from 96 to 102 feet on any segment of the National System of Interstate and Defense Highways or other qualifying Federal-aid highways;

(2) Providing a uniform fedeal standard for single tractor-trailer combinations of 60 feet in overall length. The 45 feet maximum for trailers is unnecessary as long as the maximum overall length of combination is specified at 60 feet.

(3) Preventing states from barring "doubles" from interstate highways, providing the overall length does not exceed 65 feet.

Truck hauling is vital to the pulpwood industry. All pulpwood in log form is hauled from the forest by track and more than sixty percent of all pulpwood and chips arrive directly at pulp mills by truck. Movement by truck is generally the most efficient method of transportation because most of the pulpwood and chips used by the industry originate within fifty miles of the mill.

Length and width limitations that vary from state to state result in a waste of fuel. Any truck that crosses a state line must conform to the more restricted requirements, reducing both fuel economy and manpower efficiency. A truck moving a "double" from a state that permits "doubles", to a state that does not, is required to leave one trailer at the state line and return for it—a greater waste of fuel and manpower.

Passage of S. 1402 will improve productivity, reduce energy consumption and contribute to restraining increases in consumer prices. We urge its passage.

Sincerely,

K. S. ROLSTON, *President.*

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